

# ***STIC Search Report***

***EIC 1700***

**STIC Database Tracking Number: 138932**

**TO: Duc Truong  
Location: REM 10D71  
Art Unit : 1711  
December 3, 2004**

**Case Serial Number: 10/808265**

**From: Kathleen Fuller  
Location: EIC 1700  
REMSSEN 4B28  
Phone: 571/272-2505  
Kathleen.Fuller@uspto.gov**

## **Search Notes**



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact the EIC searcher or contact:

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713
- Relevant prior art found, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not** found:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: TRW INC Examiner #: 69332 Date: 11/29/04  
 Art Unit: 1711 Phone Number 302-681 Serial Number: 17808265  
 Mail Box and Bldg/Room Location: 16D71 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Formula of claim 8, <sup>specifically,</sup> i.e. formula of claim 9. Thanks.  
 Derived from the process of claim 32.

## STAFF USE ONLY

## Type of Search

## Vendors and cost where applicable

Searcher: _____	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: _____	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

=> file reg

FILE 'REGISTRY' ENTERED AT 16:02:20 ON 03 DEC 2004

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 1 DEC 2004 HIGHEST RN 791553-15-6

DICTIONARY FILE UPDATES: 1 DEC 2004 HIGHEST RN 791553-15-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 16:02:25 ON 03 DEC 2004

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FILE COVERS 1907 - 3 Dec 2004 VOL 141 ISS 23

FILE LAST UPDATED: 1 Dec 2004 (20041201/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que

L5

STR |

HO~^Cb~^OH

1 2 3

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY UNS AT 2

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

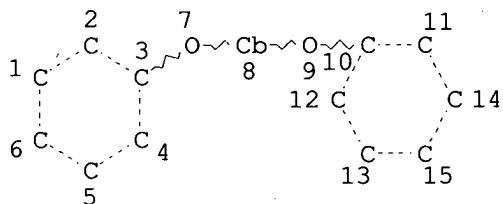
STEREO ATTRIBUTES: NONE  
L6 STR 2

X~Cb~X  
1 2 3

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
GGCAT IS MCY UNS. AT 2  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
L8 SCR 2043  
L10 378 SEA FILE=REGISTRY SSS FUL L5 AND L6 AND L8  
L11 496 SEA FILE=REGISTRY POLYLINK L10  
L16 601 SEA FILE=HCAPLUS ABB=ON L11  
L27 STR



*378 polymers from  
structure 1 and 2*

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
GGCAT IS MCY UNS AT 8  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC I  
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE  
L30 5657 SEA FILE=REGISTRY SSS FUL L27 AND L8  
L32 3969 SEA FILE=REGISTRY ABB=ON L30 AND 1-2/NC  
L33 250933 SEA FILE=REGISTRY ABB=ON PETH/PCT  
L34 3687 SEA FILE=REGISTRY ABB=ON L32 AND L33  
L35 6943 SEA FILE=HCAPLUS ABB=ON L34  
L36 1710 SEA FILE=HCAPLUS ABB=ON L35(L) (PREP OR IMF OR SPN)/RL  
L38 43 SEA FILE=HCAPLUS ABB=ON L36 AND L16  
L48 43 SEA FILE=HCAPLUS ABB=ON L38 OR L38

*5,657 polymers from  
this query*

=> d 148 1-43 bib abs ind hitstr

L48 ANSWER 1 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:411677 HCAPLUS  
DN 140:431126

TI Manufacture of silicon-containing curable polymer compositions for planar optical waveguides and wiring boards  
 IN Florence, Corey Nawarage  
 PA Fujitsu Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004143280	A2	20040520	JP 2002-309280	20021024
PRAI	JP 2002-309280		20021024		

AB The comps. containing repeating units of AD(R) [A = F-substituted (O- or S-containing) hydrocarbylene; D = F-substituted (O- or S-containing) trivalent hydrocarbon group; R = Si(OR1)(OR2)R3; R1, R2 = hydrocarbyl (each b.p. of R1OH and R2OH under normal pressure  $\leq 250^\circ$ ); R3 = (F-substituted) double bond-terminated hydrocarbyl] show n and dielec. constant of their cured products 1.350-1.600 and 2.00-4.00, resp. The comps. give cured products with adjustable n and dielec. constant, and improved mech. properties and solvent resistance.

IC ICM C08G085-00  
 ICS G02B006-12

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25, 38, 76

ST silicon curable fluoropolymer planar optical waveguide; printed circuit board fluoropolymer siloxane polybenzoxazole; aminohydroxyphenyl hexafluoropropane carboxytetrafluorophenoxybenzene benzenecarbonyl chloride bromo polymer; allyltrichlorosilane ethanol polybenzoxazole fluoropolymer polyether optical waveguide

IT Polyethers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(fluorine-containing; manufacture of silicon-containing curable polymer comps. for planar optical waveguides and wiring boards)

IT Hybrid organic-inorganic materials  
 Planar waveguides (optical)  
 Printed circuit boards  
 Solvent-resistant materials

(manufacture of silicon-containing curable polymer comps. for planar optical waveguides and wiring boards)

IT Polyethers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polyamide-, fluorine-containing; manufacture of silicon-containing curable polymer comps. for planar optical waveguides and wiring boards)

IT Fluoropolymers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polyamide-polyether-; manufacture of silicon-containing curable polymer comps. for planar optical waveguides and wiring boards)

IT Polyethers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polybenzoxazole-, fluorine-containing; manufacture of silicon-containing curable

polymer compns. for planar optical waveguides and wiring boards)

IT Polysiloxanes, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polycarbosilane-polyether-, fluorine-containing, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Polysiloxanes, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polycarbosilane-polyether-, fluorine-containing, silicate-, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Fluoropolymers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polycarbosilane-polyether-polysiloxane-, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Fluoropolymers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polycarbosilane-polyether-polysiloxane-, silicate-, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Polyethers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polycarbosilane-polysiloxane-, fluorine-containing, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Polyethers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polycarbosilane-polysiloxane-, fluorine-containing, silicate-, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Fluoropolymers, reactions

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polybenzoxazole-polyether-, manufacture of silicon-containing curable

polymer

compns. for planar optical waveguides and wiring boards)

IT Polycarbosilanes

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polyether-polysiloxane-, fluorine-containing, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Polycarbosilanes

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(polybenzoxazole-polyether-polysiloxane-, fluorine-containing, silicate-, crosslinked; manufacture of silicon-containing curable polymer compns. for planar optical waveguides and wiring boards)

IT Polysiloxanes, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP

(Preparation); USES (Uses)  
 (polycarbosilane-polyether-, fluorine-containing, crosslinked; manufacture  
 of silicon-containing curable polymer compns. for planar optical waveguides  
 and wiring boards)

IT Polysiloxanes, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-polyether-, fluorine-containing, silicate-, crosslinked;  
 manufacture of silicon-containing curable polymer compns. for planar optical  
 waveguides and wiring boards)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-polyether-polysiloxane-, fluorine-containing, crosslinked;  
 manufacture of silicon-containing curable polymer compns. for planar optical  
 waveguides and wiring boards)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-polyether-polysiloxane-, fluorine-containing, silicate-,  
 crosslinked; manufacture of silicon-containing curable polymer compns. for  
 planar optical waveguides and wiring boards)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-polyether-siloxane-, crosslinked; manufacture of  
 silicon-containing curable polymer compns. for planar optical waveguides  
 and wiring boards)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-polyether-siloxane-, silicate-, crosslinked; manufacture of  
 silicon-containing curable polymer compns. for planar optical waveguides  
 and wiring boards)

IT Polyethers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-siloxane-, fluorine-containing, crosslinked; manufacture of  
 silicon-containing curable polymer compns. for planar optical waveguides  
 and wiring boards)

IT Polyethers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polycarbosilane-siloxane-, fluorine-containing, silicate-, crosslinked;  
 manufacture of silicon-containing curable polymer compns. for planar optical  
 waveguides and wiring boards)

IT Polyamides, reactions  
 Polybenzoxazoles  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polyether-, fluorine-containing; manufacture of silicon-containing curable  
 polymer compns. for planar optical waveguides and wiring boards)

IT Fluoropolymers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polyether-; manufacture of silicon-containing curable polymer compns. for  
 planar optical waveguides and wiring boards)

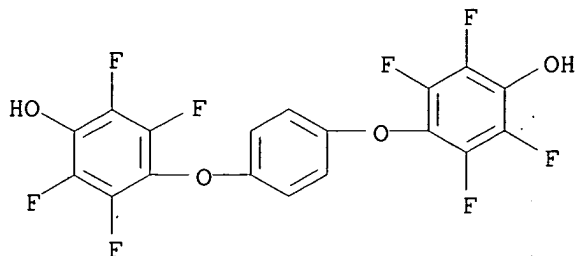


- IT Polycarbosilanes  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polyether-siloxane, fluorine-containing, crosslinked; manufacture of  
 silicon-containing curable polymer compns. for planar optical waveguides  
 and wiring boards)
- IT Polycarbosilanes  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (polyether-siloxane, fluorine-containing, silicate-, crosslinked;  
 manufacture of  
 silicon-containing curable polymer compns. for planar optical waveguides  
 and wiring boards)
- IT 107-37-9DP, Allyltrichlorosilane, reaction products with Br-containing  
 polymers and ethanol 691906-05-5DP, reaction products with  
 allyltrichlorosilane and ethanol 691906-07-7DP, reaction  
 products with allyltrichlorosilane and ethanol 691906-08-8DP,  
 reaction products with allyltrichlorosilane and ethanol  
 RL: DEV (Device component use); IMF (Industrial manufacture);  
 PREP (Preparation); USES (Uses)  
 (crosslinked; manufacture of silicon-containing curable polymer compns. for  
 planar optical waveguides and wiring boards)
- IT 64-17-5DP, Ethanol, reaction products with Br-containing polymers and ethanol  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (crosslinked; reaction products with Br-containing polymers and  
 allyltrichlorosilane)
- IT 78-10-4DP, Tetraethoxysilane, reaction products with alkoxysilane-containing  
 polymers  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (manufacture of silicon-containing curable polymer compns. for planar  
 optical  
 waveguides and wiring boards)
- IT 1644-67-3P 57863-69-1P 691906-02-2P 691906-03-3P 691906-04-4P  
 691906-05-5P 691906-06-6P 691906-07-7P 691906-08-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (manufacture of silicon-containing curable polymer compns. for planar  
 optical  
 waveguides and wiring boards)
- IT 100-39-0, Benzyl bromide 123-31-9, Hydroquinone, reactions 771-61-9,  
 Pentafluorophenol 773-82-0, Pentafluorobenzonitrile 23351-91-9,  
 5-Bromoisophthalic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacture of silicon-containing curable polymer compns. for planar  
 optical  
 waveguides and wiring boards)
- IT 691906-07-7DP, reaction products with allyltrichlorosilane and  
 ethanol 691906-08-8DP, reaction products with  
 allyltrichlorosilane and ethanol  
 RL: DEV (Device component use); IMF (Industrial manufacture);  
 PREP (Preparation); USES (Uses)  
 (crosslinked; manufacture of silicon-containing curable polymer compns. for  
 planar optical waveguides and wiring boards)
- RN 691906-07-7 HCAPLUS
- CN Phenol, 4,4'-[1,4-phenylenebis(oxy)]bis[2,3,5,6-tetrafluoro-, polymer with  
 1-bromo-3,5-difluorobenzene (9CI) (CA INDEX NAME)

CM 1

CRN 691906-06-6

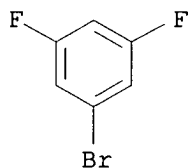
CMF C18 H6 F8 O4



CM 2

CRN 461-96-1

CMF C6 H3 Br F2



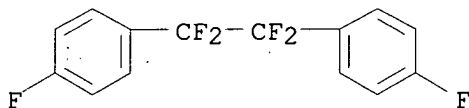
RN 691906-08-8 HCAPLUS

CN 1,4-Benzenediol, 2,3,5,6-tetrafluoro-, polymer with 1-bromo-3,5-difluorobenzene and 1,1'-(1,1,2,2-tetrafluoro-1,2-ethanediyl)bis[4-fluorobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 4100-99-6

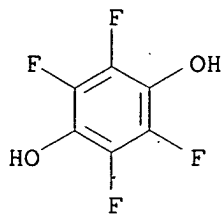
CMF C14 H8 F6



CM 2

CRN 771-63-1

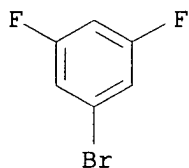
CMF C6 H2 F4 O2



CM 3

CRN 461-96-1

CMF C6 H3 Br F2



IT 691906-07-7P 691906-08-8P

RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)

(manufacture of silicon-containing curable polymer comps. for planar optical waveguides and wiring boards)

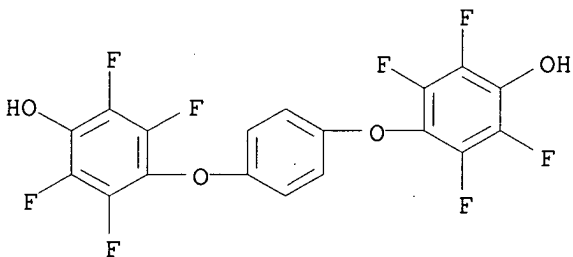
RN 691906-07-7 HCAPLUS

CN Phenol, 4,4'-[1,4-phenylenebis(oxy)]bis[2,3,5,6-tetrafluoro-, polymer with 1-bromo-3,5-difluorobenzene (9CI) (CA INDEX NAME)

CM 1

CRN 691906-06-6

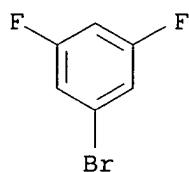
CMF C18 H6 F8 O4



CM 2

CRN 461-96-1

CMF C6 H3 Br F2



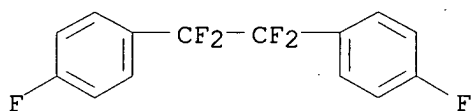
RN 691906-08-8 HCAPLUS

CN 1,4-Benzenediol, 2,3,5,6-tetrafluoro-, polymer with 1-bromo-3,5-difluorobenzene and 1,1'-(1,1,2,2-tetrafluoro-1,2-ethanediyl)bis[4-fluorobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 4100-99-6

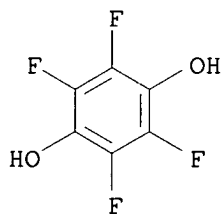
CMF C14 H8 F6



CM 2

CRN 771-63-1

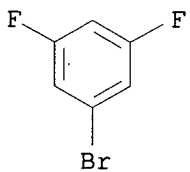
CMF C6 H2 F4 O2



CM 3

CRN 461-96-1

CMF C6 H3 Br F2



L48 ANSWER 2 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:139363 HCAPLUS

DN 140:182769

TI Fluorine-containing poly(aryl ethers), curable compositions, cured materials, adhesives, and ionic conductors therefrom, and manufacture of solvent-soluble engineering plastics therefor

IN Akutagawa, Hironobu; Omote, Kazushi; Matsumoto, Takeshi; Nishiji, Ai; Yoshida, Masaya

PA Nippon Shokubai Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

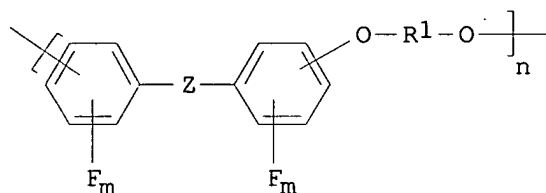
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004051978	A2	20040219	JP 2003-155624	20030530
PRAI	JP 2002-160397	A	20020531		
GI					



I

AB The F-containing poly(aryl ethers), showing high heat resistance and mech. strength, contain I units (R1 = Cl-150 divalent organic group; Z = divalent organic group, single bond; m = 1-4) and have OH and/or phosphoric acid groups in R1. Solvent-soluble widely-useful engineering plastics are manufactured

using compds. containing 2 of phenolic OH groups and  $\geq 1$  alc. OH groups as starting materials. Also claimed are ionic conductors, useful for electrolyte membranes in fuel cells, etc., comprising F-containing poly(aryl ethers) having OH, carboxy, and/or PO3H groups and proton

conductivity-imparting

agents. Thus, 4,4'-bis(2,3,4,5,6-pentafluorobenzoyl) di-Ph ether was copolymd. with Epicure 171N (resin) to give F-containing polyether-polyketone, which was mixed with tungstophosphoric acid and cured to give a film showing electrocond.  $3.2 \times 10^{-5}$  and  $6.4 \times 10^{-6}$  S/cm, at 80 and 140°, resp.

IC ICM C08G065-42

ICS H01B001-06; H01M008-02; H01M008-10

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 52

ST heat resistant arom fluoropolymer polyether polyketone ionic conductor; pentafluorobenzoyl diphenyl ether copolymer tungstophosphoric acid fuel cell electrolyte; fluorine contg polyaryl ether heat resistance mech strength adhesive; solvent sol engineering plastic arom polyether heat resistance; hydroxy phosphoric contg fluoropolymer polyether polyketone heat resistance

IT Polyethers, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

- (aromatic, fluorine-containing, OH- and/or phosphoric acid-containing; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Fuel cell electrolytes
  - Heat-resistant materials
  - Ionic conductors
    - (fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Adhesives
  - (heat-resistant; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Fluoropolymers, uses
  - RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
  - (polyether-, aromatic, OH- and/or phosphoric acid-containing; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Polyketones
  - RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
  - (polyether-, aromatic, fluorine-containing, hydroxy-, carboxy-, or phosphoric acid-containing; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Fluoropolymers, uses
  - RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
  - (polyether-polyketone-, aromatic, hydroxy-, carboxy-, or phosphoric acid-containing; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Polyethers, uses
  - RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
  - (polyketone-, aromatic, fluorine-containing, hydroxy-, carboxy-, or phosphoric acid-containing; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Polyphosphoric acids
  - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
  - (proton conductivity-imparting agents; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Heteropoly acids
  - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
  - (tungstophosphoric, proton conductivity-imparting agents; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT Heteropoly acids
  - RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
  - (tungstosilicic, proton conductivity-imparting agents; fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)
- IT 75-13-8DP, Isocyanic acid, esters, polymers with hydroxy-containing aromatic fluoropolymer-polyether-polyketones 323192-69-4P **659720-08-8P**  
**659720-09-9P 659720-10-2P 659720-11-3P 659720-12-4P**

659720-68-0DP, 4,4'-Bis(2,3,4,5,6-pentafluorobenzoyl) diphenyl ether-Epicure 171N copolymer ester with phosphoryl chloride, hydrolyzed  
659733-00-3P 659733-01-4P

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)

IT 659720-08-8P 659720-09-9P 659720-10-2P  
659733-00-3P 659733-01-4P

RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(fluorine-containing poly(aryl ethers) showing good heat resistance useful for adhesives and ionic conductors)

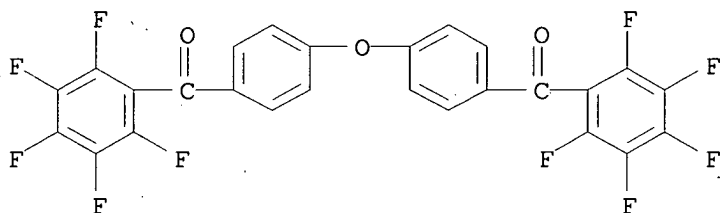
RN 659720-08-8 HCAPLUS

CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 5-(hydroxymethyl)-1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

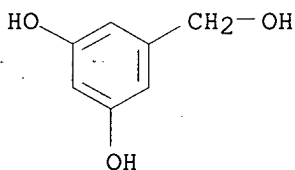
CMF C26 H8 F10 O3



CM 2

CRN 29654-55-5

CMF C7 H8 O3



RN 659720-09-9 HCAPLUS

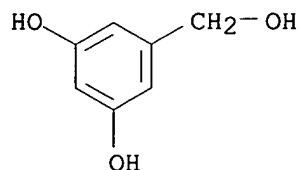
CN Poly[oxy[5-(hydroxymethyl)-1,3-phenylene]oxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)] (9CI) (CA INDEX NAME)





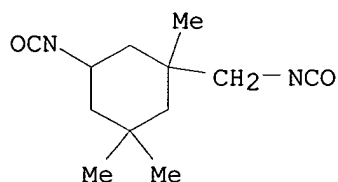
CM 2

CRN 29654-55-5  
CMF C7 H8 O3



CM 3

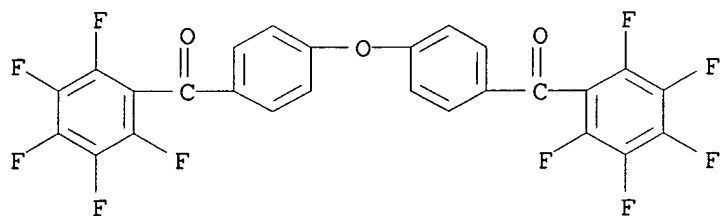
CRN 4098-71-9  
CMF C12 H18 N2 O2



RN 659733-00-3 HCAPLUS  
CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 5-(hydroxymethyl)-1,3-benzenediol and Sumidur N 3200 (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9  
CMF C26 H8 F10 O3



CM 2

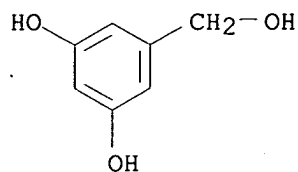
CRN 110539-63-4  
CMF Unspecified  
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 29654-55-5

CMF C7 H8 O3



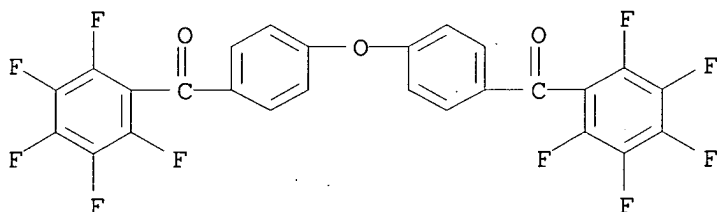
RN 659733-01-4 HCAPLUS

CN Imidodicarbonic diamide, N,N',2-tris(6-isocyanatohexyl)-, polymer with 5-(hydroxymethyl)-1,3-benzenediol and (oxydi-4,1-phenylene)bis[(pentafluorophenyl)methanone] (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

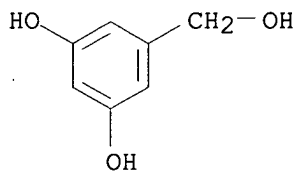
CMF C26 H8 F10 O3



CM 2

CRN 29654-55-5

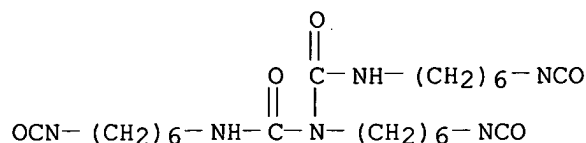
CMF C7 H8 O3



CM 3

CRN 4035-89-6

CMF C23 H38 N6 O5



L48 ANSWER 3 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:875334 HCAPLUS  
 DN 139:351094  
 TI Oligomeric hydroxy arylethers and phthalonitrile derivatives and synthesis thereof  
 IN Teddy, Keller M.; Dominguez, Dawn  
 PA The Government of the United States of America as Represented by the Secretary of the Navy, USA  
 SO PCT Int. Appl., 41 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 2

*Applicant*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003091312	A1	20031106	WO 2002-US37597	20021210
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003229198	A1	20031211	US 2002-135012	20020426
US 6756470	B2	20040629		
US 2004181027	A1	20040916	US 2004-808264	20040317
US 2004181028	A1	20040916	US 2004-808265	20040317
US 2004181029	A1	20040916	US 2004-808266	20040317
PRAI US 2002-135012	A	20020426		
JP 2003-85740	A	20030326		

OS MARPAT 139:351094  
 AB An aromatic ether oligomer or polyarom. ether comprises (OAr)<sub>n</sub>, wherein Ar is an independently selected divalent aromatic radical, and is formed by reacting a dihydroxyarom. with a dihaloarom. A phthalonitrile monomer is formed by reacting a 3- or 4-nitrophthalonitrile with a hydroxy-terminated aromatic ether oligomer. A heat-resistant thermoset is formed by curing the phthalonitrile monomer. A curable polymer was prepared by polymerizing m-diiodobenzene and resorcinol, followed by reaction with 4-nitrophthalonitrile.  
 IC ICM C08G065-40  
 ICS C08G079-02; C08F014-00; C08F214-00; C08F236-10; C08F236-12; C08F236-16  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST curable polyaryl ether heat resistance  
 IT Heat-resistant materials  
 Polymerization  
 (oligomeric hydroxy arylethers and phthalonitrile derivs. and synthesis thereof)

IT Polyoxyarylenes  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

IT Monomers  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (phthalonitrile-terminated polyether oligomers; oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

IT Plastics, preparation  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (thermosetting; oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

IT 104-15-4, p-Toluenesulfonic acid, uses 108-45-2, 1,3-Phenylenediamine, uses 122-39-4, Diphenylamine, uses 2783-17-7, 1,12-Diaminododecane 7681-65-4, Cuprous iodide 7784-27-2, Aluminum nitratnonahydrate 7787-70-4, Cuprousbromide 10025-69-1, Stannous chloridedihydrate 13080-89-2, Bis[4-(4-aminophenoxy)phenyl]sulfone 59326-56-6, 1,4-Bis(3-aminophenoxy)benzene 268734-11-8, Cloisite 30A  
 RL: CAT (Catalyst use); USES (Uses)  
 (curing agent; oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

IT 618906-02-8P 618906-03-9P  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

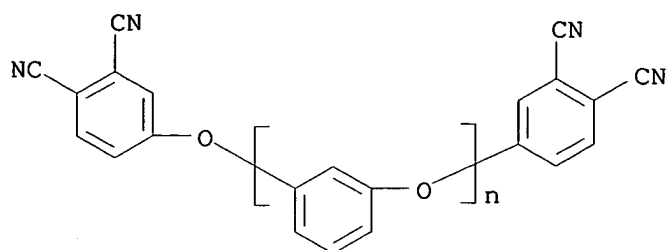
IT 591-50-4DP, Iodobenzene, reaction products with m-diiodobenzene-resorcinol copolymer 25190-64-1P, Poly(oxy-1,3-phenylene) 31643-49-9DP, 4-Nitrophthalonitrile, reaction products with m-diiodobenzene-resorcinol copolymer 89871-66-9P 106335-34-6P 106335-37-9P, Poly(oxy-1,3-phenyleneoxy-1,4-phenylene) 618905-99-0DP, reaction products with iodobenzene 618905-99-0P 618906-00-6P 618906-01-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

IT 618906-02-8P 618906-03-9P  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (oligomeric hydroxy arylethers and phthalonitile derivs. and synthesis thereof)

RN 618906-02-8 HCAPLUS  
 CN Poly(oxy-1,3-phenylene),  $\alpha$ -(3,4-dicyanophenyl)- $\omega$ -(3,4-dicyanophenoxy)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

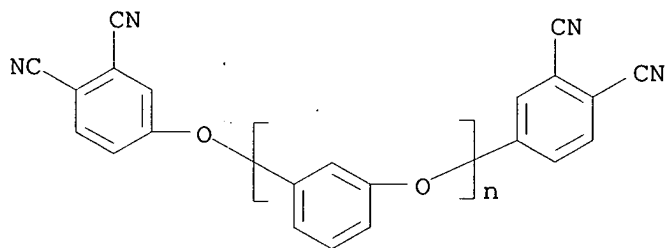
CRN 618906-01-7  
 CMF (C6 H4 O)<sub>n</sub> C16 H6 N4 O  
 CCI PMS



RN 618906-03-9 HCAPLUS  
 CN 1,2-Benzenedicarbonitrile, 4,4'-[[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis-,  
 polymer with  $\alpha$ -(3,4-dicyanophenyl)- $\omega$ -(3,4-  
 dicyanophenoxy)poly(oxy-1,3-phenylene) (9CI) (CA INDEX NAME)

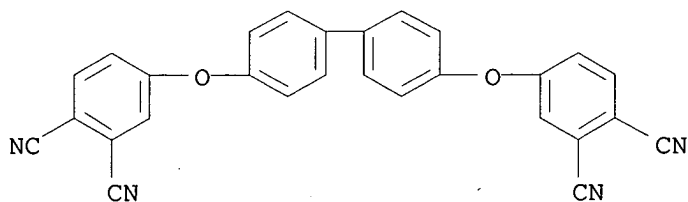
CM 1

CRN 618906-01-7  
 CMF (C6 H4 O)<sub>n</sub> C16 H6 N4 O  
 CCI PMS



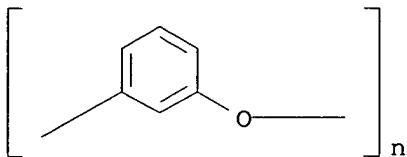
CM 2

CRN 38791-69-4  
 CMF C28 H14 N4 O2



IT 25190-64-1P, Poly(oxy-1,3-phenylene) 89871-66-9P  
 106335-34-6P 106335-37-9P, Poly(oxy-1,3-phenyleneoxy-1,4-  
 phenylene) 618905-99-ODP, reaction products with iodobenzene  
 618905-99-OP 618906-00-6P 618906-01-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (oligomeric hydroxy aryethers and phthalonitile derivs. and synthesis  
 thereof)

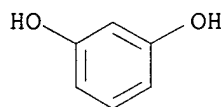
RN 25190-64-1 HCAPLUS  
CN Poly(oxy-1,3-phenylene) (9CI) (CA INDEX NAME)



RN 89871-66-9 HCAPLUS  
CN 1,3-Benzenediol, polymer with 1,3-dibromobenzene (9CI) (CA INDEX NAME)

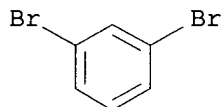
CM 1

CRN 108-46-3  
CMF C6 H6 O2



CM 2

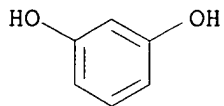
CRN 108-36-1  
CMF C6 H4 Br2



RN 106335-34-6 HCAPLUS  
CN 1,3-Benzenediol, polymer with 1,4-dibromobenzene (9CI) (CA INDEX NAME)

CM 1

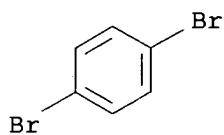
CRN 108-46-3  
CMF C6 H6 O2



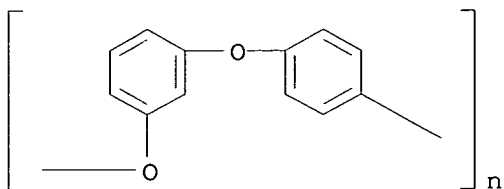
CM 2

CRN 106-37-6

CMF C6 H4 Br2



RN 106335-37-9 HCAPLUS  
CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylene) (9CI) (CA INDEX NAME)

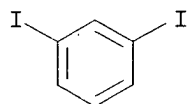


RN 618905-99-0 HCAPLUS  
CN 1,3-Benzenediol, polymer with 1,3-diiodobenzene (9CI) (CA INDEX NAME)

CM 1

CRN 626-00-6

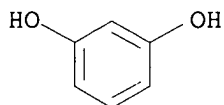
CMF C6 H4 I2



CM 2

CRN 108-46-3

CMF C6 H6 O2

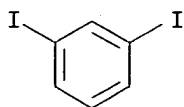


RN 618905-99-0 HCAPLUS  
CN 1,3-Benzenediol, polymer with 1,3-diiodobenzene (9CI) (CA INDEX NAME)

CM 1

CRN 626-00-6

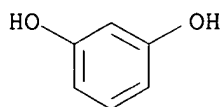
CMF C6 H4 I2



CM 2

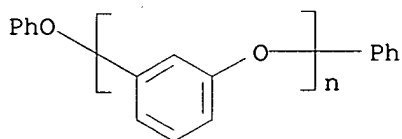
CRN 108-46-3

CMF C6 H6 O2



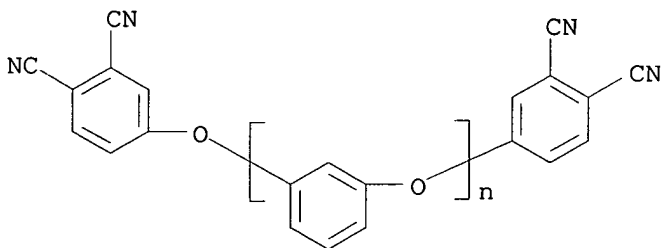
RN 618906-00-6 HCAPLUS

CN Poly(oxy-1,3-phenylene),  $\alpha$ -phenyl- $\omega$ -phenoxy- (9CI) (CA INDEX NAME)



RN 618906-01-7 HCAPLUS

CN Poly(oxy-1,3-phenylene),  $\alpha$ -(3,4-dicyanophenyl)- $\omega$ -(3,4-dicyanophenoxy)- (9CI) (CA INDEX NAME)



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 4 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:893913 HCAPLUS

DN 139:117739

TI Novel fluorine-containing second-order NLO polymers with high glass transition temperature

AU Ushiwata, Takami; Okamoto, Etsuya; Komatsu, Kyoji; Kaino, Toshikuni; Jen, Alex K.-Y.

CS Institute of Multidisciplinary Research for Advanced Materials, Tohoku



University, Aoba, Sendai, 980-8577, Japan

SO Optical Materials (Amsterdam, Netherlands) (2003), 21(1-3), 61-65  
 CODEN: OMATET; ISSN: 0925-3467

PB Elsevier Science B.V.

DT Journal

LA English

AB The synthesis and linear and nonlinear optical (NLO) properties of novel fluorine-containing second-order NLO polymers with high glass transition temperature  
 (T<sub>g</sub>) are reported. Using pentafluorobenzonitrile as a starting material, a monomer with electron-donating group for NLO active site was synthesized. This monomer was polymerized with four types of bisphenol analogs. Three types of electron-withdrawing groups for NLO activity were introduced into the polymers by post-functionalization. These NLO polymers show high T<sub>g</sub>s, e.g., a polymer containing fluorene structure has T<sub>g</sub> of 209°C. An NLO polymer with fluorene structure and DR1 at 100 mol% content does not show polarized light dependence of the refractive indexes and has very low optical propagation loss of 0.42 dB/cm at 1.3 μm. The polymer has χ<sup>(2)</sup> value of about 57 pm/V at 1.3 μm fundamental wavelength and the nonlinearity was maintained at 100°C for more than 160 h.

CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36, 73

ST fluoropolymer polyether prepn second order optical property

IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (cardo, fluorine-containing; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (fluorine-containing; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, cardo; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT Cardo polymers  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyethers, fluorine-containing; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT Glass transition temperature  
 Nonlinear optical materials  
 Optical absorption  
 Polymerization  
 Refractive index  
 Second-order nonlinear optical susceptibility  
 (preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT Functional groups  
 (preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

various functional groups and high glass transition temperature)

IT 498547-41-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT 565185-54-8DP, derivs. containing optically active pendent groups  
 RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**  
 ; **PREP (Preparation)**; RACT (Reactant or reagent)  
 (preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

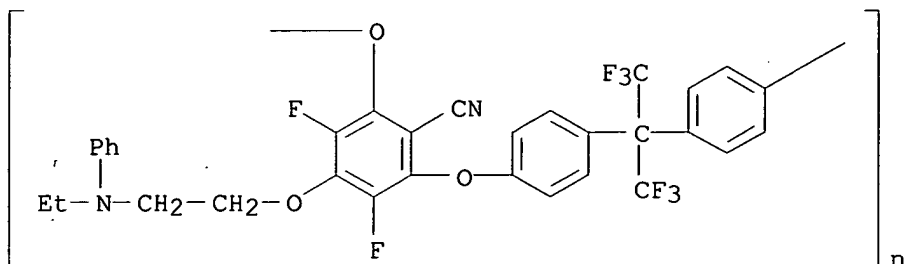
IT 100-01-6DP, p-Nitroaniline, reaction products with functionalized polyfluoro-polyethers 14778-29-1DP, Tetracyanoethane, reaction products with functionalized polyfluoro-polyethers 156170-41-1P  
 498547-42-5DP, derivs. containing optically active pendent groups  
 498547-43-6DP, derivs. containing optically active pendent groups  
 498547-45-8DP, derivs. containing optically active pendent groups  
 498547-46-9DP, derivs. containing optically active pendent groups  
 498547-46-9P 565185-52-6DP, derivs. containing optically active pendent groups 565185-53-7DP, derivs. containing optically active pendent groups 565185-55-9DP, derivs. containing optically active pendent groups  
 RL: PRP (Properties); **SPN (Synthetic preparation)**; **PREP (Preparation)**  
 (preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT 565185-55-9P  
 RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)  
 (preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT 92-50-2, 2-(N-Ethylanilino)ethanol 773-82-0, Pentafluorobenzonitrile  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in monomer preparation; preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

IT 565185-54-8DP, derivs. containing optically active pendent groups  
 RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**  
 ; **PREP (Preparation)**; RACT (Reactant or reagent)  
 (preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)

RN 565185-54-8 HCAPLUS  
 CN Poly[oxy[2-cyano-5-[2-(ethylphenylamino)ethoxy]-4,6-difluoro-1,3-phenylene]oxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenylene] (9CI) (CA INDEX NAME)



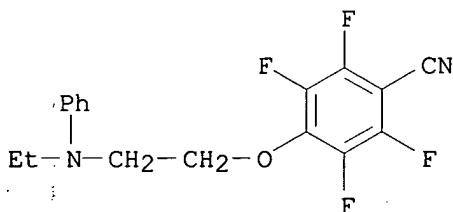
IT 498547-42-5DP, derivs. containing optically active pendent groups  
 565185-52-6DP, derivs. containing optically active pendent groups  
 565185-53-7DP, derivs. containing optically active pendent groups  
 565185-55-9DP, derivs. containing optically active pendent groups  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)

(preparation of fluorine-containing second-order nonlinear optical polymers  
 with high glass transition temperature)

RN 498547-42-5 HCAPLUS  
 CN Benzonitrile, 4-[2-(ethylphenylamino)ethoxy]-2,3,5,6-tetrafluoro-, polymer  
 with 1,3-benzenediol (9CI) (CA INDEX NAME)

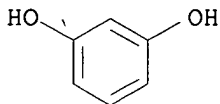
CM 1

CRN 498547-41-4  
 CMF C17 H14 F4 N2 O

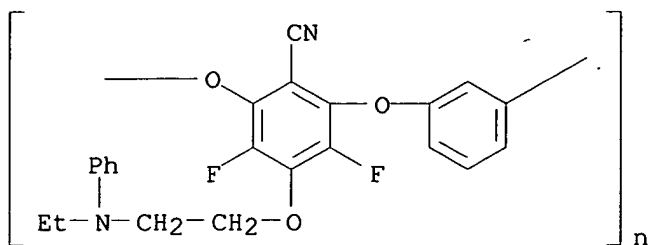


CM 2

CRN 108-46-3  
 CMF C6 H6 O2

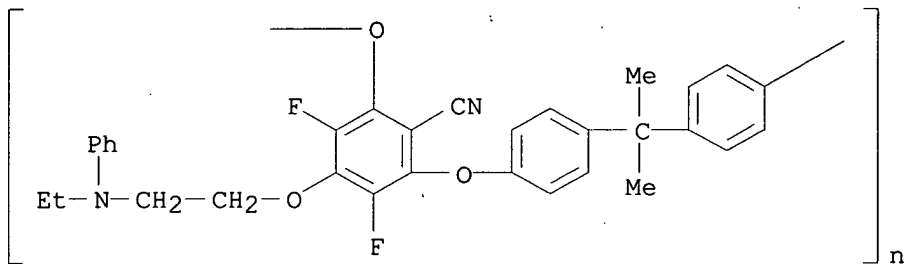


RN 565185-52-6 HCAPLUS  
 CN Poly[oxy[2-cyano-4-[2-(ethylphenylamino)ethoxy]-4,6-difluoro-1,3-phenylene]oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



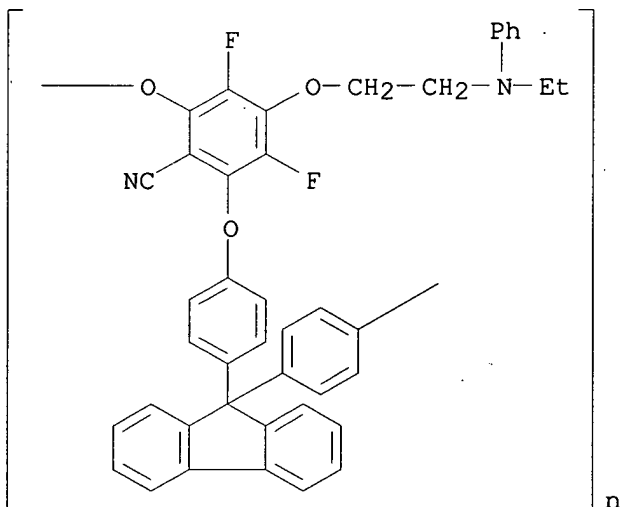
RN 565185-53-7 HCAPLUS

CN Poly[oxy[2-cyano-5-[2-(ethylphenylamino)ethoxy]-4,6-difluoro-1,3-phenylene]oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 565185-55-9 HCAPLUS

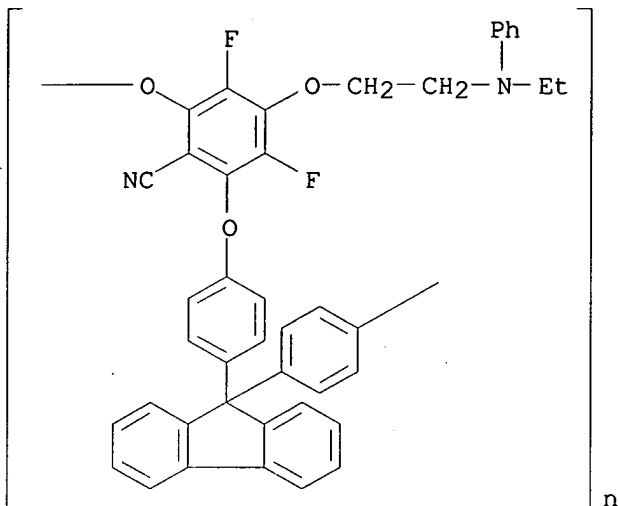
CN Poly[oxy[2-cyano-5-[2-(ethylphenylamino)ethoxy]-4,6-difluoro-1,3-phenylene]oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)



IT 565185-55-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of fluorine-containing second-order nonlinear optical polymers with high glass transition temperature)  
 RN 565185-55-9 HCAPLUS  
 CN Poly[oxy[2-cyano-5-[2-(ethylphenylamino)ethoxy]-4,6-difluoro-1,3-phenylene]oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 5 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:805947 HCAPLUS  
 DN 138:73633  
 TI Poly(arylene ether)s containing phenylphosphine oxide groups  
 AU Smith, J. G., Jr.; Thompson, C. M.; Watson, K. A.; Connell, J. W.  
 CS NASA Langley Research Center, Hampton, VA, 23681-2199, USA  
 SO High Performance Polymers (2002), 14(2), 225-239  
 CODEN: HPPOEX; ISSN: 0954-0083  
 PB Sage Publications  
 DT Journal  
 LA English  
 AB As part of a NASA program to develop materials for potential future space applications, poly(arylene ether)s containing phenylphosphine oxide groups were prepared and characterized. The polymers were synthesized by the aromatic nucleophilic displacement reaction of 2 isomeric bisphenols, 2,5-dihydroxyphenyldiphenylphosphine oxide and bis(4-hydroxyphenyl)phenylphosphine oxide, with activated aromatic difluorides in the presence of anhydrous potassium carbonate in N,N-dimethylacetamide at 155°. The polymers exhibited inherent viscosities from 0.35-1.00 dL g<sup>-1</sup> and glass transition temps. from 160-249°. Thermogravimetric analyses showed 5% weight loss ranging from 382-479° in air and 377-505° in N. Unoriented thin films exhibited tensile strengths, moduli, and break elongations at 23° of 49-94 MPa, 2.3-3.4 GPa, and 6-41%, resp. Limiting oxygen indexes from 18-32 were calculated based on polymer char residues at 850° in N. The polymers exhibited relatively low solar absorptivities ranging from 0.04-0.16 and thermal emissivities ranging from 0.48-0.63. The chemical, phys., and mech.

- properties of these polymers are presented herein.
- CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36, 37, 73
- ST polyoxyarylene phenylphosphine oxide contg prepn optical thermal mech property; bisphenol monomer phenylphosphine oxide contg prepn polymn
- IT Polyethers, preparation  
Polyoxyalkylenes, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(fluorine-containing, phosphorus-containing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Oxygen index  
(limiting; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(phosphorus-containing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Fluoropolymers, preparation  
Polyketones  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, phosphorus-containing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, phosphorus-containing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyoxyalkylene-, phosphorus-containing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polysulfone-, phosphorus-containing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Emissivity  
Tensile strength  
(preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Optical absorption  
(solar; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT Strength  
(tearing; preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)
- IT 795-43-7P 13291-46-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(monomer; preparation and polymerization of phenylphosphine oxide group-containing bisphenol monomers)
- IT 104-92-7, 4-Bromoanisole 106-51-4, p-Benzoquinone, reactions 824-72-6, Phenylphosphonic dichloride 4559-70-0, Diphenylphosphine oxide

RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation and polymerization of phenylphosphine oxide group-containing bisphenol monomers)

IT 799-55-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and polymerization of phenylphosphine oxide group-containing bisphenol monomers)

IT 87827-34-7P 87836-96-2P **132139-83-4P 151039-92-8P**  
**151039-93-9P** 152122-70-8P 152122-71-9P 152122-74-2P  
197306-72-2P 197306-75-5P 197306-76-6P 479676-31-8P 479676-32-9P  
479676-33-0P 479676-34-1P 479676-35-2P 479676-36-3P 479676-37-4P  
479676-38-5P 479676-39-6P 479676-40-9P 479676-41-0P 479676-42-1P  
479676-43-2P 479676-44-3P 479676-45-4P **479676-46-5P**  
480998-86-5P 480998-87-6P 480998-88-7P 480998-90-1P 480998-91-2P  
480998-92-3P **480998-93-4P**

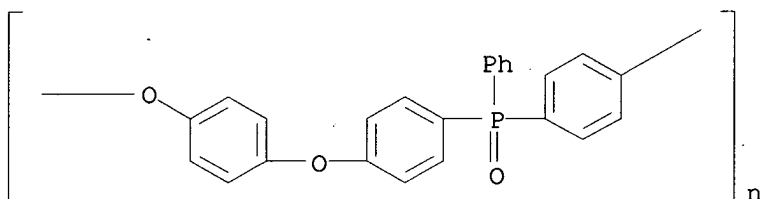
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)

IT **132139-83-4P 151039-92-8P 151039-93-9P**  
**479676-46-5P 480998-93-4P**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and properties of poly(arylene ether)s containing phenylphosphine oxide groups for space application)

RN 132139-83-4 HCAPLUS

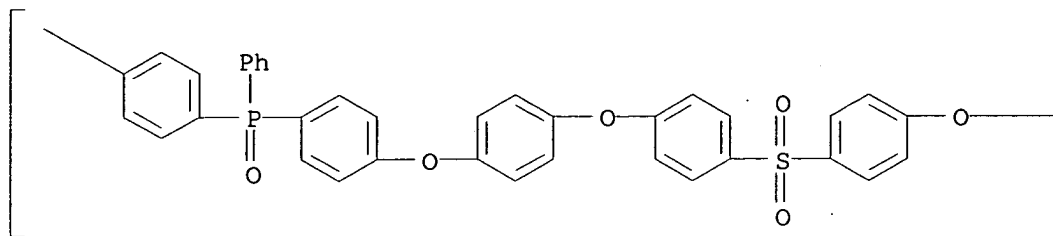
CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(phenylphosphinyldiene)-1,4-phenylene] (9CI) (CA INDEX NAME)



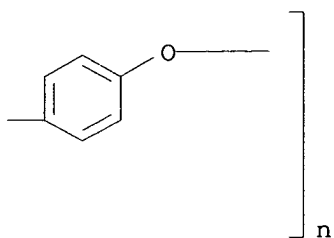
RN 151039-92-8 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylene(phenylphosphinyldiene)-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

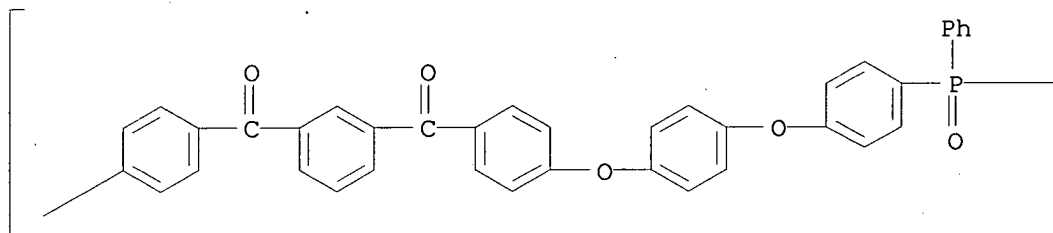


PAGE 1-B

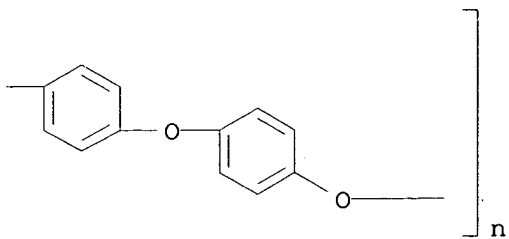


RN 151039-93-9 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(phenylphosphinylidene)-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,3-phenylenecarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



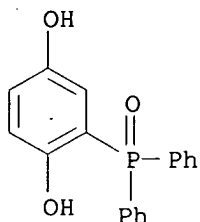
RN 479676-46-5 HCAPLUS  
 CN 1,4-Benzenediol, 2-(diphenylphosphinyl)-, polymer with



2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl (9CI) (CA INDEX NAME)

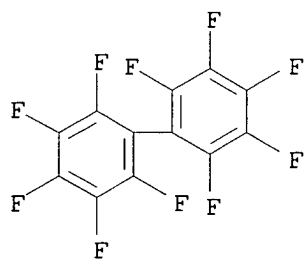
CM 1

CRN 13291-46-8  
CMF C18 H15 O3 P



CM 2

CRN 434-90-2  
CMF C12 F10



RN 480998-93-4 HCAPLUS  
CN Poly[oxy[(diphenylphosphinyl)-1,4-phenylene]oxy(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 6 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:31295 HCAPLUS  
DN 136:102821  
TI Biocompatible polymeric materials  
IN Devine, John Neil; Kemmish, David John; Wilson, Brian; Griffiths, Ian  
PA Victrex Manufacturing Ltd., UK  
SO PCT Int. Appl., 59 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002002158	A1	20020110	WO 2001-GB2792	20010622

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,  
 HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,  
 LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,  
 RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,  
 VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2000-15424 A 20000624

AB A biocompatible polymeric material for use in medical applications, for example in an orthopedic implant, comprises a copolymer having a unit (A) in combination with a unit (B) and/or a unit (C), wherein biocompatible moieties are associated with said copolymer and (A) represents a semi-crystalline

polyarylether-polyketone moiety, (B) represents a unit which is incompatible with unit (A) (e.g. polydimethylsiloxane) and (C) represents an amorphous polyarylether-polyketone or polyarylether-polysulfone unit. Optionally, the polymeric material is based on blends of polymers having (A) units. These polymeric materials exhibit good processability at  $\geq 350^\circ$ .

IC ICM A61L027-14  
 ICS A61L031-04

CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 37, 63

ST heat resistant biocompatible arom polyether polyketone; polysulfone arom polyether heat resistant biocompatible; polysiloxane block copolymer biocompatible heat resistant

IT Heat-resistant materials  
 Prosthetic materials and Prosthetics  
 (biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT Polyketones  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, aromatic; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT Polyketones  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyimide-, fluorine-containing; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyimide-polyketone-; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT Polysiloxanes, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyketone-, block, aromatic; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT Polyimides, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material

- use); PREP (Preparation); USES (Uses)  
 (polyether-polyketone-, fluorine-containing; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT Polyketones  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-siloxane-, block, aromatic; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyimide-polyketone-, fluorine-containing; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyketone-, aromatic; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyketone-siloxane-, block, aromatic; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT Polymer blends  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (semicryst. polyether-polyketone blends; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT **387821-38-7P**, 2,6-Difluorobenzonitrile-4,4'-difluorobenzophenone-hydroquinone copolymer 387821-39-8P, 4,4'-Difluorobenzophenone-dimethylsilanediol-hydroquinone block copolymer 387821-42-3P, 4,4'-Difluorobenzophenone-diphenyl ether-3-fluorobenzoyl chloride-hydroquinone-isophthaloyl chloride block copolymer 387821-46-7P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT 126539-72-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer precursor; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT 139-59-3, 4-Phenoxyaniline 403-43-0, 4-Fluorobenzoyl chloride 1107-00-2, 4,4'-Hexafluoroisopropylidenediphthalic anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer precursor; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)
- IT 387821-45-6P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(monomer; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT 29658-26-2P, 4,4'-Difluorobenzophenone-hydroquinone copolymer  
**31694-16-3P**, 4,4'-Difluorobenzophenone-hydroquinone copolymer, sru  
 387821-40-1P, Diphenyl ether-3-fluorobenzoyl chloride-isophthaloyl chloride copolymer

RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)

(precursor; biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

IT **387821-38-7P**, 2,6-Difluorobenzonitrile-4,4'-difluorobenzophenone-hydroquinone copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

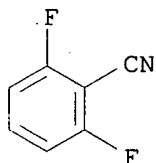
(biocompatible polymeric materials based on semicryst. aromatic polyether-polyketones with good high-temperature processability)

RN 387821-38-7 HCAPLUS

CN Benzonitrile, 2,6-difluoro-, polymer with 1,4-benzenediol and bis(4-fluorophenyl)methanone (9CI) (CA INDEX NAME)

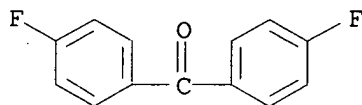
CM 1

CRN 1897-52-5  
 CMF C7 H3 F2 N



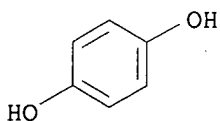
CM 2

CRN 345-92-6  
 CMF C13 H8 F2 O

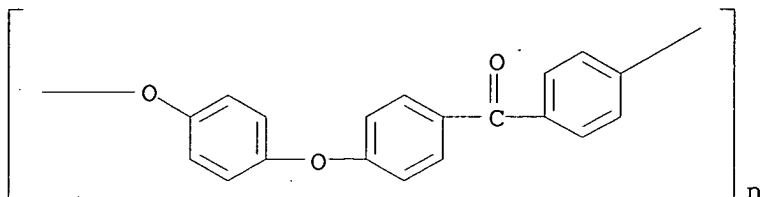


CM 3

CRN 123-31-9  
 CMF C6 H6 O2



IT 31694-16-3P, 4,4'-Difluorobenzophenone-hydroquinone copolymer, sru  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (precursor; biocompatible polymeric materials based on semicryst. aromatic  
 polyether-polyketones with good high-temperature processability)  
 RN 31694-16-3 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA  
 INDEX NAME)



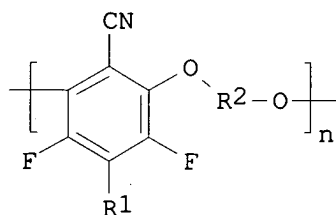
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 7 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:796290 HCAPLUS  
 DN 135:344910  
 TI Polycyanoaryl ether and method for production thereof  
 IN Kimura, Kunio; Yamashita, Yuhiko; Okumura, Yasunori; Ito, Shoji  
 PA Nippon Shokubai Co., Ltd., Japan  
 SO Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English

FAN.CNT 1

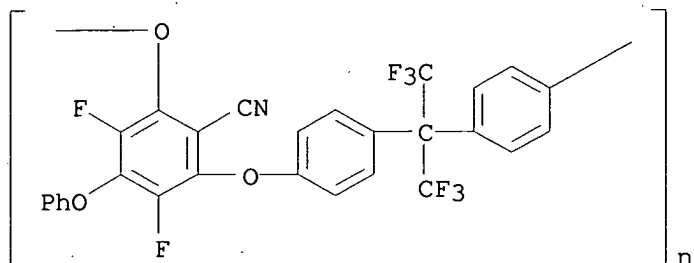
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1149853	A1	20011031	EP 2001-303894	20010427
	EP 1149853	B1	20040811		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 2002007039	A1	20020117	US 2001-843320	20010425
	US 6506872	B2	20030114		
	JP 2002012662	A2	20020115	JP 2001-132704	20010427
	CN 1323846	A	20011128	CN 2001-121434	20010428
PRAI	JP 2000-130877	A	20000428		
GI					



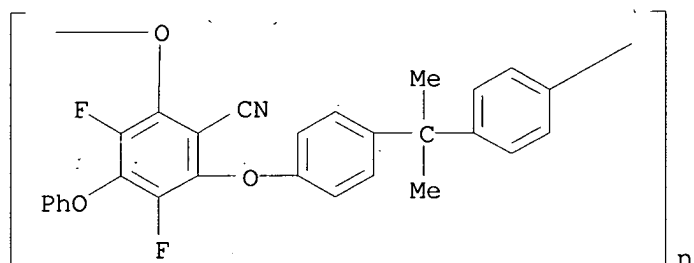
I

- AB A novel polycyanoaryl ether exhibiting excellent heat resistance, hydrolysis resistance and weatherability, as well as industrially high general-purpose properties, and the method for the production thereof is to be provided. The polycyanoaryl ether of this invention is represented I: wherein R1 stands for a substituted or unsubstituted alkyl group of 1 to 12 carbon atoms, a substituted or unsubstituted alkoxy group of 1 to 12 carbon atoms, a substituted or unsubstituted alkylamino group of 1 to 12 carbon atoms, a substituted or unsubstituted alkylthio group of 1 to 12 carbon atoms, a substituted or unsubstituted aryl group of 6 to 20 carbon atoms, a substituted or unsubstituted aryloxy group of 6 to 20 carbon atoms, a substituted or unsubstituted arylamino group of 6 to 20 carbon atoms, or a substituted or unsubstituted arylthio group of 6 to 20 carbon atoms; R2 stands for a divalent organic group; and n stands for a d.p. A polymer was prepared from 2,2-bis(4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane and 4-phenoxy-2,3,5,6-tetrafluorobenzonitrile.
- IC ICM C08G065-00  
ICS C08G065-40; C08L071-00
- CC 35-4 (Chemistry of Synthetic High Polymers)
- ST polycyanoaryl ether manuf
- IT Polyoxyarylenes  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(fluorine-containing, cardo, cyano; polycyanoaryl ether and method for production thereof)
- IT Polyoxyarylenes  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(fluorine-containing, cyano; polycyanoaryl ether and method for production thereof)
- IT Polymerization  
(polycyanoaryl ether and method for production thereof)
- IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(polyoxyarylene-, cardo, cyano; polycyanoaryl ether and method for production thereof)
- IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(polyoxyarylene-, cyano; polycyanoaryl ether and method for production thereof)
- IT Cardo polymers  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(polyoxyarylenes, fluorine-containing, cyano; polycyanoaryl ether and method for production thereof)
- IT 471-34-1, Calcium carbonate, uses 584-08-7, Potassium carbonate  
1305-62-0, Calcium hydroxide, uses 1310-58-3, Potassium hydroxide, uses 7789-23-3, Potassiumfluoride  
RL: CAT (Catalyst use); USES (Uses)  
(polycyanoaryl ether and method for production thereof)
- IT 343310-24-7P 343310-25-8P 343310-26-9P 343310-27-0P  
343310-28-1P 343310-29-2P 343310-30-5P  
343310-31-6P 343310-32-7P 343310-33-8P 343310-34-9P  
343310-35-0P 343310-36-1P 343310-37-2P 343310-38-3P  
343310-39-4P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(polycyanoaryl ether and method for production thereof)
- IT 67600-87-7P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(polycyanoaryl ether and method for production thereof)
- IT 108-95-2, Phenol, reactions 773-82-0, 2,3,4,5,6-Pen-tafluorobenzonitrile  
RL: RCT (Reactant); RACT (Reactant or reagent)

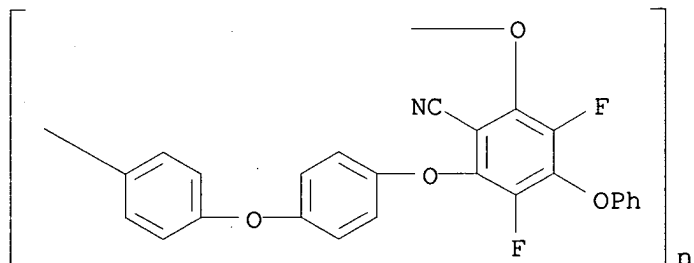
(polycyanoaryl ether and method for production thereof)  
 IT 343310-25-8P 343310-27-0P 343310-29-2P  
 343310-30-5P 343310-31-6P 343310-33-8P  
 343310-35-0P 343310-37-2P 343310-39-4P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (polycyanoaryl ether and method for production thereof)  
 RN 343310-25-8 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-27-0 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-29-2 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



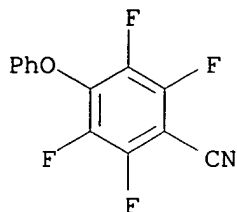
RN 343310-30-5 HCAPLUS

CN Benzonitrile, 2,3,5,6-tetrafluoro-4-phenoxy-, polymer with 1,4-benzenediol  
(9CI) (CA INDEX NAME)

CM 1

CRN 67600-87-7

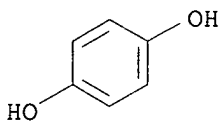
CMF C13 H5 F4 N O



CM 2

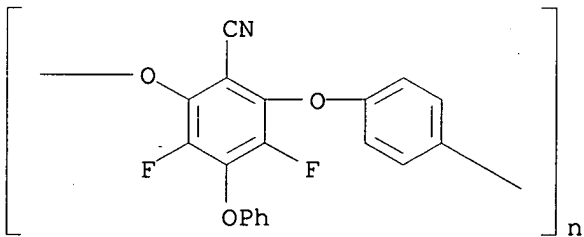
CRN 123-31-9

CMF C6 H6 O2



RN 343310-31-6 HCAPLUS

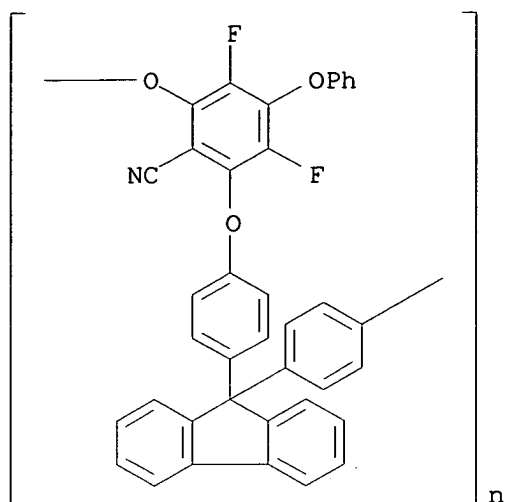
CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene]  
(9CI) (CA INDEX NAME)



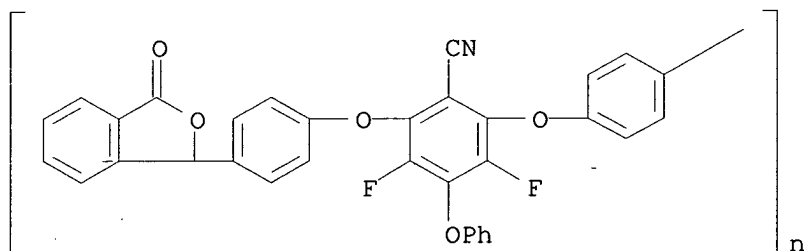
RN 343310-33-8 HCAPLUS

CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)

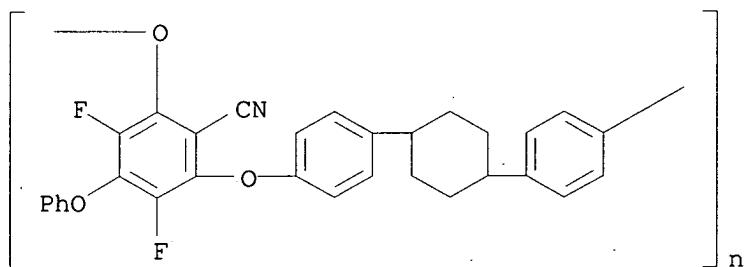




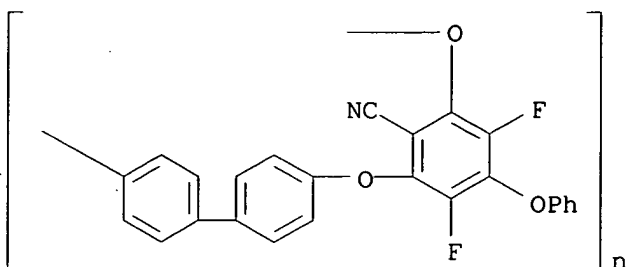
RN 343310-35-0 HCAPLUS  
 CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-37-2 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene-1,4-cyclohexanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-39-4 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L48 ANSWER 8 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:677484 HCAPLUS  
DN 135:358293  
TI Synthesis and phase state of fluoro-containing copoly(arylates)  
AU Voitekunas, V. Yu.; Vasnev, V. A.; Markova, G. D.; Vinogradova, S. V.;  
Kameneva, T. M.  
CS Nesmeyanov Inst. of Organoelement Compounds, Russian Academy of Sciences,  
Moscow, 117813, Russia  
SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (2001), 43(7),  
1121-1126  
CODEN: VSSBEE; ISSN: 1023-3091  
PB MAIK Nauka/Interperiodica Publishing  
DT Journal  
LA Russian  
AB Fluoro-containing homo- and copoly(arylates) based on terephthaloyl chloride,  
hydroquinone, and fluoro-containing bis(phenols), namely, bis(4'-  
hydroxyphenyl)-2,2-hexafluoropropane, 4,4'-bis(hydroxyphenoxy)tetrafluorob  
enzene, and 4,4'-bis(hydroxyphenoxy)octafluorodiphenyl, were synthesized  
by the solution acceptor-catalytic polyesterification, and the properties of  
the resulting polymers were studied. The use of bis(4'-hydroxyphenyl)-2,2-  
hexafluoropropane, 2-hydroxyphenoxy derivs. of tetrafluorobenzene, and 2-  
and 4-hydroxyphenoxy derivs. of octafluorodiphenyl leads to the formation  
of liquid crystalline (LC) homo- and copolymers. It was demonstrated that the  
introduction of chlorine atoms into the ortho position of  
bis(4'-hydroxyphenyl)-2,2-hexafluoropropane and the employment of dimeric  
bis(4'-hydroxyphenyl)-2,2-hexafluoropropane bring about the production of  
homo- and copolymers devoid of LC properties.  
CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36, 75  
ST arom liq cryst polyester fluoropolymer prepn  
IT Polyesters, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(fluorine-containing; synthesis and phase state of fluoro-containing  
copoly(arylates))  
IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-, fluorine-containing; synthesis and phase state of  
fluoro-containing copoly(arylates))  
IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-, synthesis and phase state of fluoro-containing  
copoly(arylates))  
IT Fluoropolymers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(polyester-polyether-; synthesis and phase state of fluoro-containing copoly(arylates))

IT Polyesters, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, fluorine-containing; synthesis and phase state of fluoro-containing copoly(arylates))

IT Liquid crystals, polymeric  
 (synthesis and phase state of fluoro-containing copoly(arylates))

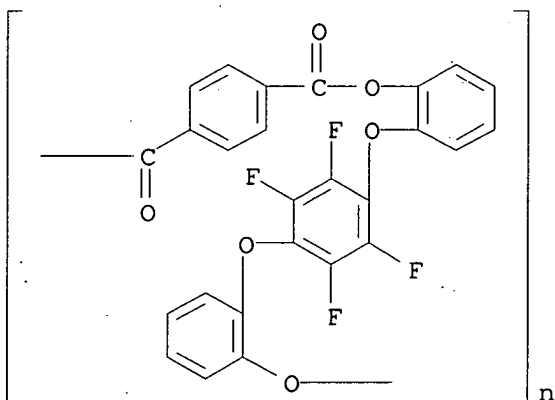
IT Polyesters, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and phase state of fluoro-containing copoly(arylates))

IT 26637-45-6P 31943-60-9P 52871-58-6P, Hydroquinone-terephthaloyl dichloride copolymer 80752-57-4P 80757-90-0P 80757-94-4P, Bisphenol AF-terephthaloyl chloride copolymer **94196-65-3P**  
**94197-18-9P 94197-24-7P** 96537-62-1P 96537-90-5P  
 125938-51-4P 125938-93-4P 373391-97-0P, Bisphenol AF-hydroquinone-terephthaloyl dichloride copolymer 373391-98-1P 373391-99-2P  
**373392-00-8P 373392-01-9P 373392-02-0P**  
**373392-03-1P 373392-04-2P**  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and phase state of fluoro-containing copoly(arylates))

IT **94196-65-3P 94197-18-9P 94197-24-7P**  
**373392-00-8P 373392-01-9P 373392-02-0P**  
**373392-03-1P 373392-04-2P**  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and phase state of fluoro-containing copoly(arylates))

RN 94196-65-3 HCAPLUS

CN Poly[oxy-1,2-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,2-phenyleneoxycarbonyl-1,4-phenylenecarbonyl] (9CI) (CA INDEX NAME)



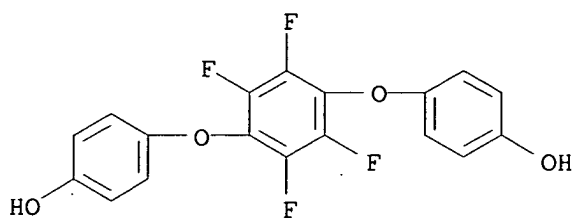
RN 94197-18-9 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)bis(oxy)]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 94197-17-8

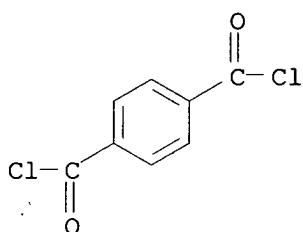
CMF C18 H10 F4 O4



CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2



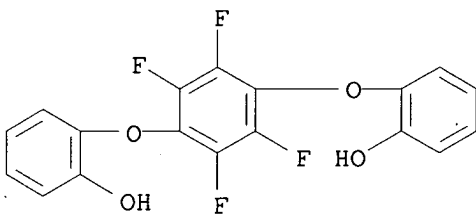
RN 94197-24-7 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 2,2'-[(2,3,5,6-tetrafluoro-1,4-phenylene)bis(oxy)]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 85225-62-3

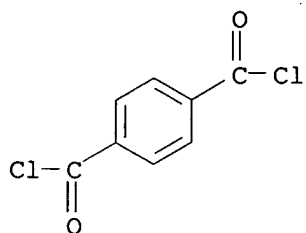
CMF C18 H10 F4 O4



CM 2

CRN 100-20-9

CMF C8 H4 Cl2 O2

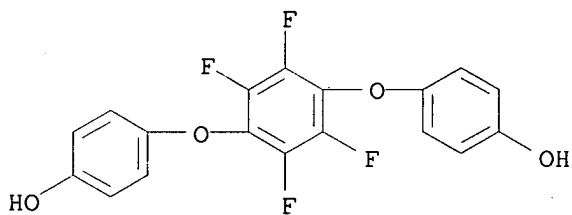


RN 373392-00-8 HCAPLUS  
 CN 1,4-Benzenedicarbonyl dichloride, polymer with 1,4-benzenediol and  
 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)bis(oxy)]bis[phenol] (9CI) (CA  
 INDEX NAME)

CM 1

CRN 94197-17-8

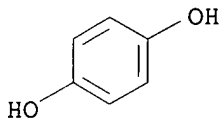
CMF C18 H10 F4 O4



CM 2

CRN 123-31-9

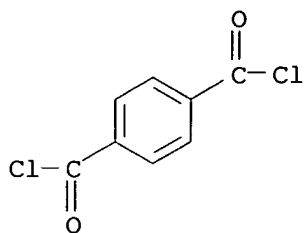
CMF C6 H6 O2



CM 3

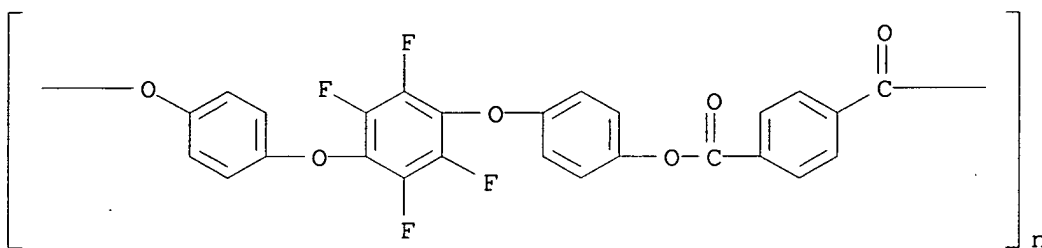
CRN 100-20-9

CMF C8 H4 Cl2 O2



RN 373392-01-9 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenyleneoxycarbonyl-1,4-phenylenecarbonyl] (9CI) (CA INDEX NAME)



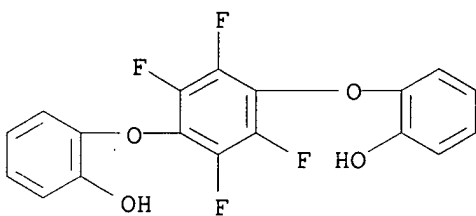
RN 373392-02-0 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1,4-benzenediol and 2,2'-[(2,3,5,6-tetrafluoro-1,4-phenylene)bis(oxy)]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 85225-62-3

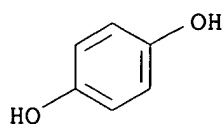
CMF C18 H10 F4 O4



CM 2

CRN 123-31-9

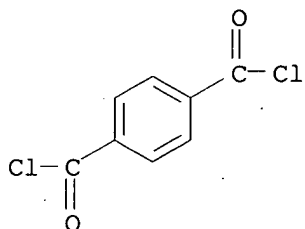
CMF C6 H6 O2



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



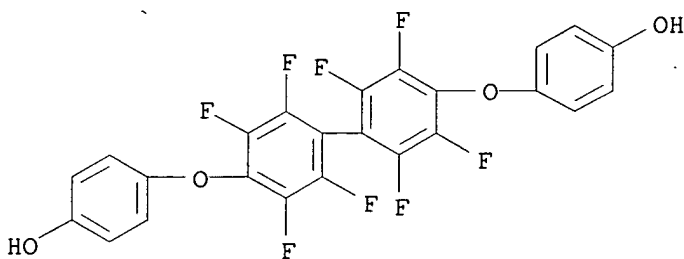
RN 373392-03-1 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1,4-benzenediol and 4,4'-[(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)bis(oxy)]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 96537-87-0

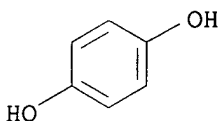
CMF C24 H10 F8 O4



CM 2

CRN 123-31-9

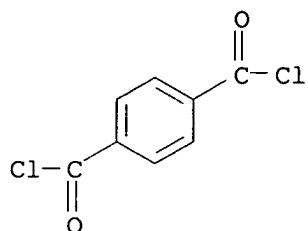
CMF C6 H6 O2



CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2



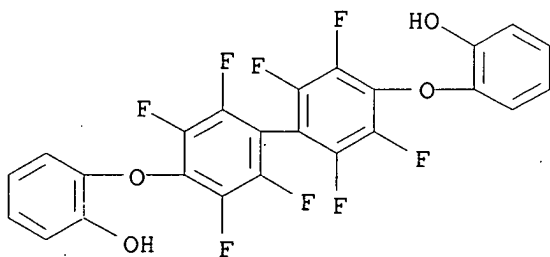
RN 373392-04-2 HCAPLUS

CN 1,4-Benzenedicarbonyl dichloride, polymer with 1,4-benzenediol and 2,2'-[(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)bis(oxy)]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 85225-66-7

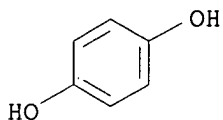
CMF C24 H10 F8 O4



CM 2

CRN 123-31-9

CMF C6 H6 O2

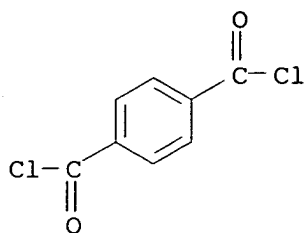


CM 3

CRN 100-20-9

CMF C8 H4 Cl2 O2





- L48 ANSWER 9 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:670068 HCAPLUS  
 DN 135:372091  
 TI Synthesis and properties of poly(arylene ether)s bearing sulfonic acid groups on pendant phenyl rings  
 AU Miyatake, Kenji; Hay, Allan S.  
 CS Department of Chemistry, McGill University, Montreal, QC, H3A 2K6, Can.  
 SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(19), 3211-3217  
 CODEN: JPACEC; ISSN: 0887-624X  
 PB John Wiley & Sons, Inc.  
 DT Journal  
 LA English  
 AB Two kinds of new aromatic poly(arylene ether)s containing sulfonic acid groups were synthesized. Polymer 1 composed of tetraphenylphenylene ether and perfluorobiphenylene units was sulfonated with chlorosulfonic acid. Sulfonation took place only at the para position of the pendant Ph rings. The average degree of sulfonation per repeating unit (m) was controlled from 1 to 4. Sulfonated polymer 2 with m = 3 was soluble in methanol and DMSO and swelled in water. Incorporating bis(3,5-dimethylphenyl)sulfone moieties into the sulfonated polymer imparts less methanol affinity. Polymers 4 with 30-65 mol % tetrakis(sulfophenyl)phenylene ether units has high decomposition temps. above 300°C, hydrophilicity, and good hydrolytic stability.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST polyether polysulfone arom synthesis sulfonation thermal property soly  
 IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (fluorine-containing, aromatic, sulfonated; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)  
 IT Polysulfones, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic, sulfonated, aromatic, fluorine-containing; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)  
 IT Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic, sulfonated; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)  
 IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polysulfone-, aromatic, sulfonated, aromatic, fluorine-containing; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)  
 IT Glass transition  
 Hydrophilicity

Sulfonation

Thermal stability

(synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)

IT 338453-91-1DP, para-phenyl-sulfonated 338453-92-2DP,  
para-phenyl-sulfonated 374668-48-1DP, para-phenyl-sulfonated  
RL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)

(1-4 sulfonate groups per repeating unit; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)

IT 110-78-1, Propylisocyanate 13288-70-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(monomer synthesis; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)

IT 374668-32-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(monomer; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)

IT 374668-32-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(monomer; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)

IT 338453-91-1DP, para-phenyl-sulfonated 338453-92-2DP,  
para-phenyl-sulfonated

RL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)

(1-4 sulfonate groups per repeating unit; synthesis and properties of poly(arylene ethers) bearing sulfonic acid groups on pendant Ph rings)

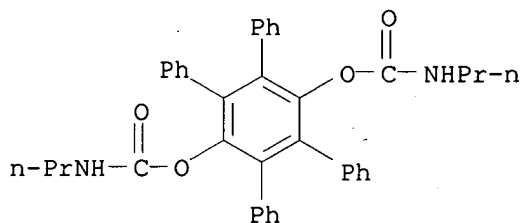
RN 338453-91-1 HCAPLUS

CN Carbamic acid, propyl-, 4',3'-diphenyl[1,1':2',1''-terphenyl]-3',6'-diyl ester, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 338453-80-8

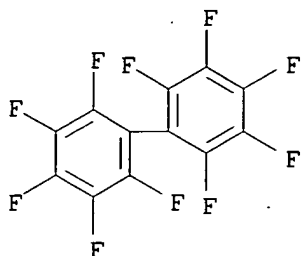
CMF C38 H36 N2 O4



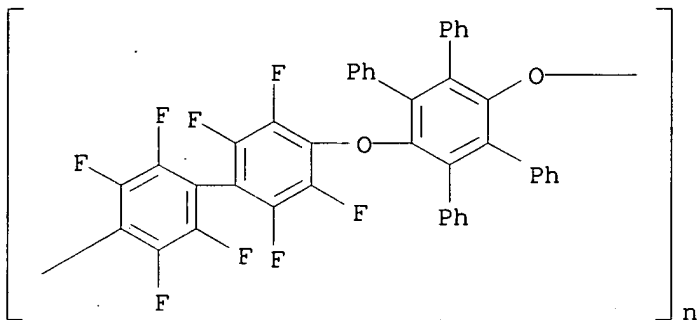
CM 2

CRN 434-90-2

CMF C12 F10



RN 338453-92-2 HCAPLUS  
 CN Poly[oxy(4',5'-diphenyl[1,1':2',1''-terphenyl]-3',6'-diyl)oxy(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)] (9CI)  
 (CA INDEX NAME)



RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 10 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:229972 HCAPLUS  
 DN 135:20030  
 TI Synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-pentafluorobenzonitrile  
 AU Kimura, Kunio; Tabuchi, Yumi; Nishichi, Ai; Yamashita, Yuhiko; Okumura, Yasunori; Sakaguchi, Yoshimitu  
 CS Faculty of Environmental Science and Technology, Okayama University, Okayama, 700-8530, Japan  
 SO Polymer Journal (Tokyo, Japan) (2001), 33(3), 290-296  
 CODEN: POLJB8; ISSN: 0032-3896  
 PB Society of Polymer Science, Japan  
 DT Journal  
 LA English  
 AB 2,3,4,5,6-Pentafluorobenzonitrile (PFBN) is a valuable intermediate and it is available as a com. product. In this paper, synthesis and characterization of novel fluorinated poly(ether nitrile)s (PEN) derived from PFBN is reported. Novel fluorinated PENs containing fluorine atoms in the main chain and pendant phenoxy group (2F-PEN) are synthesized by aromatic nucleophilic substitution reaction, of which Mn ranges from 1.77 + 104 to 5.16 + 104. The obtained PENs show excellent solubilities in common solvents, and 2F-PEN(6FBA) and 2F-PEN(DPE) can be cast as tough transparent films. These polymers have high thermal stabilities with the 5% weight loss temperature in the range 509-562°C and the Tg of

142-235°C, which is highly dependent on the structures.

CC 35-5 (Chemistry of Synthetic High Polymers)

ST pentafluorobenzonitrile fluorine contg polyether nitrile; arom nucleophilic substitution fluorinated polyether nitrile; thermal stability soly fluorinated polyether nitrile

IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, cardo, fluorine-containing; synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, fluorine-containing; synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT Polyoxyarylenes  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (cyano-containing; synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT Glass transition temperature  
 Mechanical loss  
 Solubility  
 Thermal stability  
 Young's modulus  
 (of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic, cardo; synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic; synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT Cardo polymers  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyethers, aromatic, fluorine-containing; synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT 773-82-0, 2,3,4,5,6-Pentafluorobenzonitrile  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from)

IT 343310-24-7P 343310-25-8P 343310-26-9P 343310-27-0P  
 343310-28-1P 343310-29-2P 343310-30-5P  
 343310-31-6P 343310-32-7P 343310-33-8P 343310-34-9P  
 343310-35-0P 343310-36-1P 343310-37-2P 343310-38-3P  
 343310-39-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (Preparation)  
 (synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

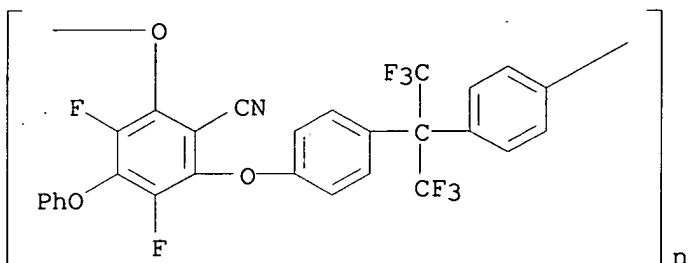
IT 67600-87-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

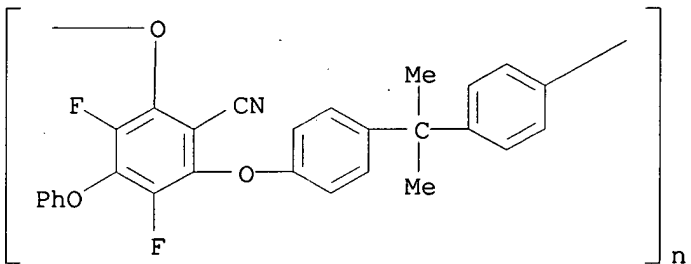
IT 67600-87-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

IT 343310-25-8P 343310-27-0P 343310-29-2P  
 343310-30-5P 343310-31-6P 343310-33-8P  
 343310-35-0P 343310-37-2P 343310-39-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis of novel fluorine-containing poly(aryl ether nitrile)s derived from 2,3,4,5,6-Pentafluorobenzonitrile)

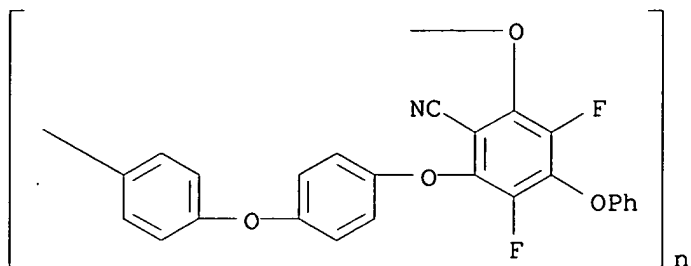
RN 343310-25-8 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-27-0 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



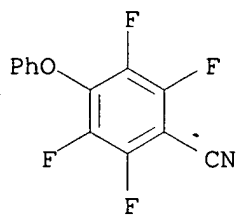
RN 343310-29-2 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-30-5 HCAPLUS  
 CN Benzonitrile, 2,3,5,6-tetrafluoro-4-phenoxy-, polymer with 1,4-benzenediol  
 (9CI) (CA INDEX NAME)

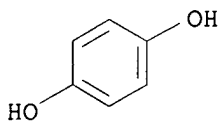
CM 1

CRN 67600-87-7  
 CMF C13 H5 F4 N O

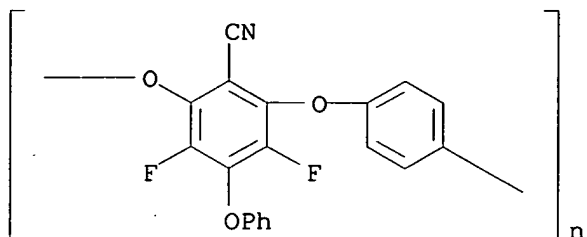


CM 2

CRN 123-31-9  
 CMF C6 H6 O2

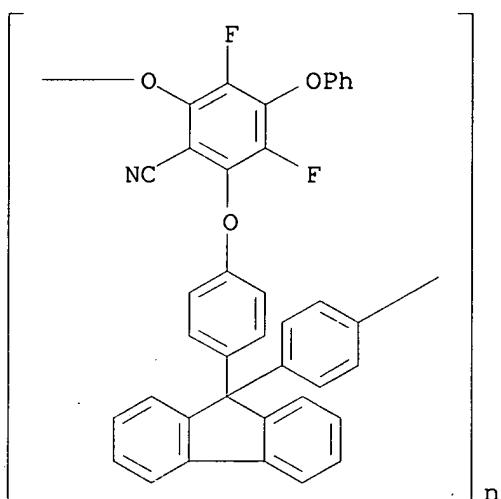


RN 343310-31-6 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



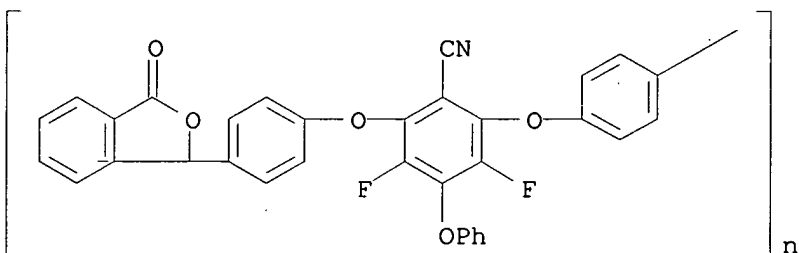
RN 343310-33-8 HCAPLUS

CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)



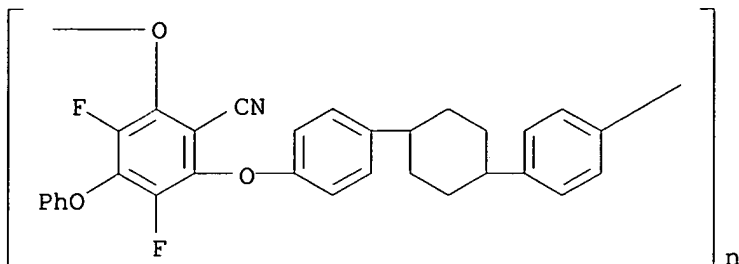
RN 343310-35-0 HCAPLUS

CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)

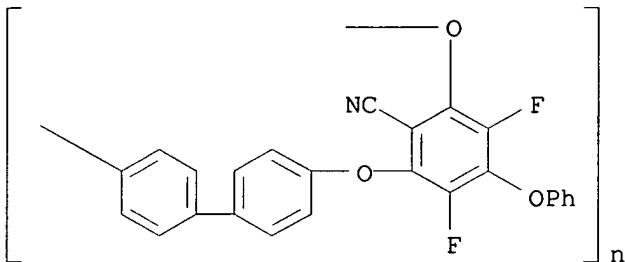


RN 343310-37-2 HCAPLUS

CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy-1,4-phenylene-1,4-cyclohexanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 343310-39-4 HCAPLUS  
 CN Poly[oxy(2-cyano-4,6-difluoro-5-phenoxy-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 11 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:176773 HCAPLUS

DN 134:208664

TI (2,3,4,5,6-pentafluorobenzoyl)diphenyl ethers and fluorine-containing aryl ether ketone polymers having high solubility and heat stability

IN Kimura, Kunio; Yamashita, Yoshihiko; Casiday, Rachel E.; Fitch, John W., III; Reddy, V. Sreenivasulu

PA Nippon Shokubai Kagaku Kogyo Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001064226	A2	20010313	JP 1999-183950	19990629
PRAI	US 1998-106270	A	19980629		
	JP 1999-180091	A	19990625		

AB The compds. QCO-p-C<sub>6</sub>H<sub>4</sub>O-p-C<sub>6</sub>H<sub>4</sub>R (Q = 2,3,4,5,6-pentafluorophenyl; R = OH, CO<sub>2</sub>) are manufactured. Thus, 2,3,4,5,6-pentafluoro-4'-hydroxybenzophenone (prepared from 2,3,4,5,6-pentafluoro-4'-methoxybenzophenone) was polymerized in dimethylacetamide at 160° to give a polymer showing good solubility in dimethylacetamide and m-cresol, 10% weight loss (in air) temperature 421°.

IC ICM C07C049-84

ICS C08G065-00

CC 37-3 (Plastics Manufacture and Processing)



Section cross-reference(s): 25

ST fluorobenzoylphenyl ether polymer manuf soly; heat stability  
fluorobenzoylphenyl ether polymer manuf

IT Polyketones  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(polyether-, fluorine-containing; (pentafluorobenzoyl)phenyl ether as  
monomers for F-containing aryl ether ketone polymers having high solubility  
and heat stability)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(polyether-polyketone-; (pentafluorobenzoyl)phenyl ether as monomers  
for F-containing aryl ether ketone polymers having high solubility and heat  
stability)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(polyketone-, fluorine-containing; (pentafluorobenzoyl)phenyl ether as  
monomers for F-containing aryl ether ketone polymers having high solubility  
and heat stability)

IT 213693-04-0P **213693-05-1P** 213693-06-2P 213693-07-3P  
213693-08-4P 213693-09-5P 213693-10-8P 213693-11-9P 213693-12-0P  
213693-13-1P **213693-14-2P 213693-15-3P**  
**213693-16-4P 213693-17-5P** 317335-38-9P 317335-39-0P  
RL: IMF (Industrial manufacture); PRP (Properties); PREP  
(Preparation)  
((pentafluorobenzoyl)phenyl ether as monomers for F-containing aryl ether  
ketone polymers having high solubility and heat stability)

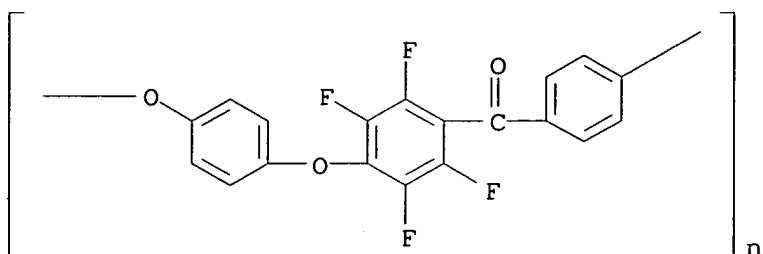
IT 2251-50-5P, 2,3,4,5,6-Pentafluorobenzoyl chloride 87751-62-0P,  
4-Ethoxydiphenyl ether 134994-24-4P 213692-99-0P 213693-01-7P  
213693-03-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
((pentafluorobenzoyl)phenyl ether as monomers for F-containing aryl ether  
ketone polymers having high solubility and heat stability)

IT 101-84-8, Diphenyl ether 344-07-0 602-94-8, 2,3,4,5,6-  
Pentafluorobenzoic acid 831-82-3, p-Phenoxyphenol 134994-23-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
((pentafluorobenzoyl)phenyl ether as monomers for F-containing aryl ether  
ketone polymers having high solubility and heat stability)

IT **213693-05-1P 213693-14-2P 213693-15-3P**  
**213693-16-4P 213693-17-5P**  
RL: IMF (Industrial manufacture); PRP (Properties); PREP  
(Preparation)  
((pentafluorobenzoyl)phenyl ether as monomers for F-containing aryl ether  
ketone polymers having high solubility and heat stability)

RN 213693-05-1 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-  
phenylene] (9CI) (CA INDEX NAME)



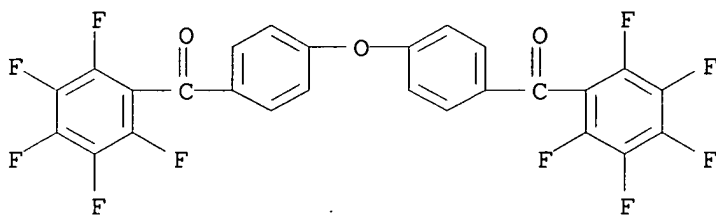
RN 213693-14-2 HCAPLUS

CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

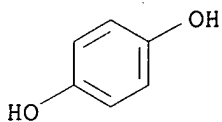
CMF C26 H8 F10 O3



CM 2

CRN 123-31-9

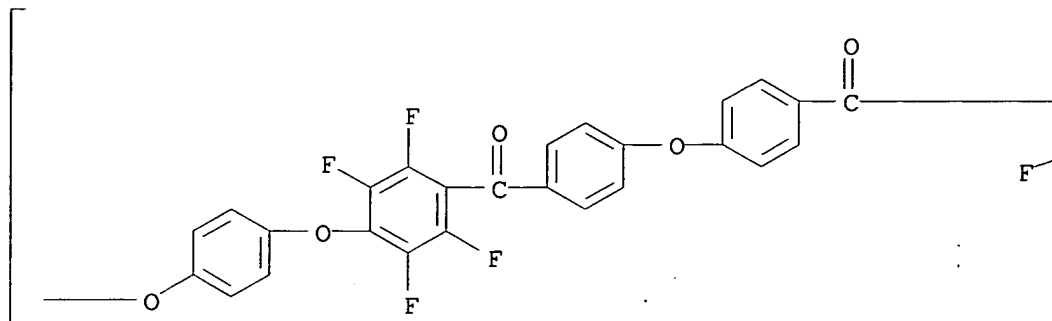
CMF C6 H6 O2



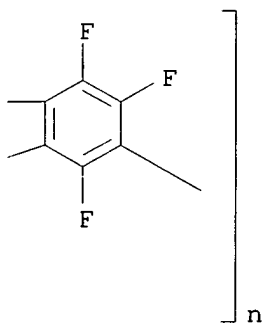
RN 213693-15-3 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



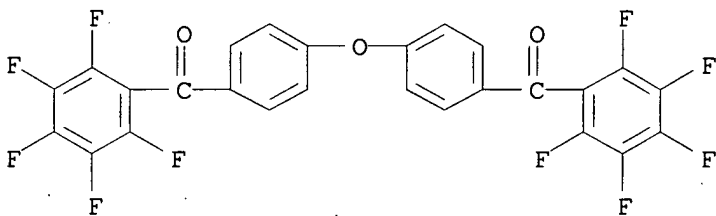
PAGE 1-B



RN 213693-16-4 HCAPLUS  
 CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with  
 1,3-benzenediol (9CI) (CA INDEX NAME)

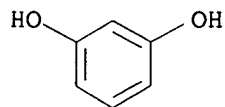
CM 1

CRN 213693-03-9  
 CMF C26 H8 F10 O3



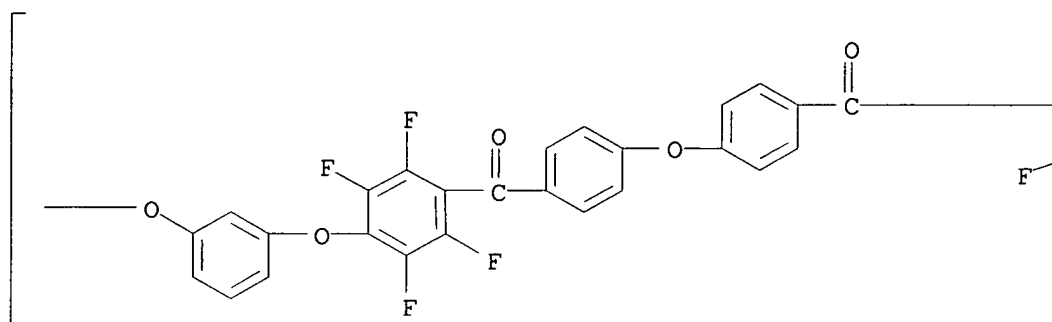
CM 2

CRN 108-46-3  
 CMF C6 H6 O2

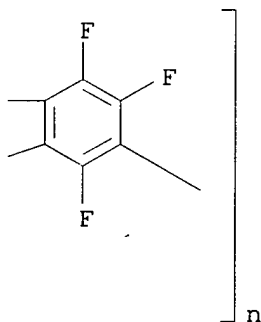


RN 213693-17-5 HCAPLUS  
 CN Poly[oxy-1,3-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)]  
 (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L48 ANSWER 12 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:153020 HCAPLUS  
 DN 134:340775  
 TI Synthesis and Properties of Novel Sulfonated Arylene Ether/Fluorinated  
 Alkane Copolymers  
 AU Miyatake, Kenji; Oyaizu, Kenichi; Tsuchida, Eishun; Hay, Allan S.  
 CS Department of Chemistry, McGill University, Montreal, QC, H3A 2K6, Can.  
 SO Macromolecules (2001), 34(7), 2065-2071  
 CODEN: MAMOBX; ISSN: 0024-9297  
 PB American Chemical Society  
 DT Journal

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

LA English

AB The polymerization of 2,3,5,6-tetraphenylhydroquinone (or 2,2',3,3',5,5'-hexaphenyl-4,4'-dihydroxybiphenyl) with  $\alpha,\omega$ -tetrahydropyrufluoroalkenediol and decafluorobiphenyl was carried out to synthesize a series of copolymers III ( $M_w = 49\ 100-80\ 900$ ). The copolymers III are composed of arylene ether (10-30 mol %) and fluorinated alkane (90-70 mol %) moieties. The reaction of III with chlorosulfonic acid gave sulfonated polymers IV, which are soluble in polar organic solvents and form flexible and transparent films by casting from solution. The polymers IV have glass transition temps. of 109-155° and decomposition temps. of ca. 300°. The hydrated polymers show protonic conductivity ( $3.4 \times 10^{-3}\ S\ cm^{-1}$ ), which does not decrease at temps. up to 170 °C.

CC 35-5 (Chemistry of Synthetic High Polymers)

ST sulfonated arylene ether fluorinated alkane copolymer

IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (fluorine-containing; synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT Fluoropolymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polyether-; synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT Ionic conductivity  
 (proton; synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT Glass transition temperature  
 (synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT 35604-20-7P 58710-18-2P 338453-83-1P 338453-84-2P 338453-87-5P  
 338453-88-6P **338453-89-7P** 338453-90-0P **338453-91-1P**  
**338453-92-2P** 338453-93-3P 338453-94-4P 338453-95-5DP,  
 reaction products with chlorosulfonic acid 338453-95-5P 338453-96-6DP,  
 reaction products with chlorosulfonic acid 338453-96-6P  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
 (synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT 110-78-1, n-Propylisocyanate 754-96-1 914-18-1 137142-52-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT 338453-79-5P 338453-80-8P 338453-82-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

IT 338453-81-9P 338453-97-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

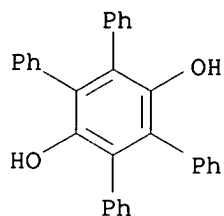
IT **338453-89-7P 338453-91-1P 338453-92-2P**  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
 (synthesis and properties of sulfonated arylene ether/fluorinated alkane copolymers)

RN 338453-89-7 HCAPLUS

CN [1,1':2',1''-Terphenyl]-3',6'-diol, 4',5'-diphenyl-, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl (9CI) (CA INDEX NAME)

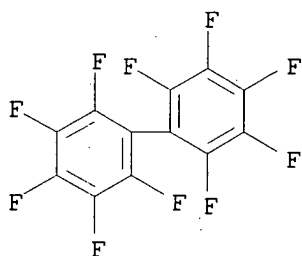
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CRN 914-18-1  
CMF C30 H22 O2



CM 2

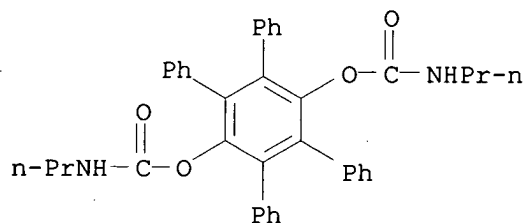
CRN 434-90-2  
CMF C12 F10



RN 338453-91-1 HCAPLUS  
CN Carbamic acid, propyl-, 4',3'-diphenyl[1,1':2',1''-terphenyl]-3',6'-diyl ester, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl (9CI) (CA INDEX NAME)

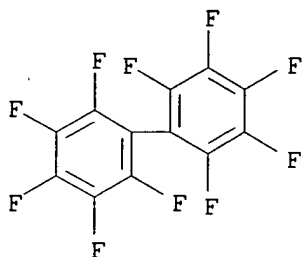
CM 1

CRN 338453-80-8  
CMF C38 H36 N2 O4

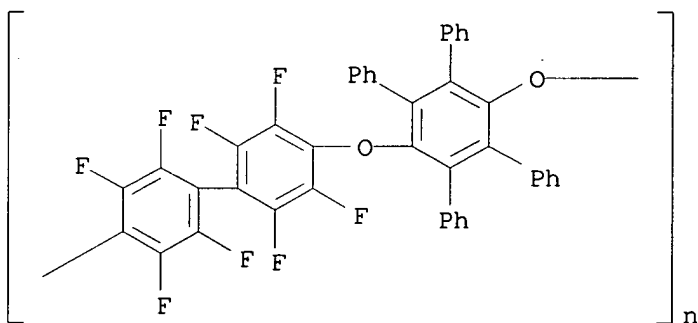


CM 2

CRN 434-90-2  
CMF C12 F10



RN 338453-92-2 HCAPLUS  
CN Poly[oxy(4',5'-diphenyl[1,1':2',1''-terphenyl]-3',6'-  
diyl)oxy(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)] (9CI)  
(CA INDEX NAME)



RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 13 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:124290 HCAPLUS  
DN 134:179345  
TI Low dielectric fluorinated aromatic polyether ketone compositions with  
good heat resistance  
IN Kimura, Kunio; Yamashita, Yoshihiko; Okumura, Yasunori  
PA Nippon Shokubai Kagaku Kogyo Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 21 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001049110	A2	20010220	JP 1999-226981	19990810
	JP 3539897	B2	20040707		
PRAI	JP 1999-226981		19990810		

AB The comps., useful for elec. insulating materials, contain  
(p-C6F4COC6H4-qXqOR1m)n [R1 = C6H4-rX'r(CO-p-C6F4OR2)pO; R2 = divalent  
aryl; X, X' = halo, lower alkyl, alkoxy; q, r = 0-4; m, p = 0, 1]. Thus,  
2,2-bis(4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane was polymerized with

- 4,4'-bis(2,3,4,5,6-pentafluorobenzoyl)diphenyl ether to give a polymer showing dielec. constant 3.06 at 25°, 10% weight loss temperature 524° under N, and Tg 174°.
- IC ICM C08L071-00  
ICS C08G065-00
- CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 76
- ST dielec low fluorinated polyether polyketone arom; hydroxyphenyl fluoropropane fluorobenzoyldiphenyl ether elec insulator; heat resistance fluorinated polyether polyketone arom
- IT Heat-resistant materials  
(dielec.; low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT Polyketones  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing, polyether-; low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT Electric insulators  
(heat-resistant; low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT Cardo polymers  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT Polyketones  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, aromatic, fluoropolymers; low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT Polyethers, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyketone-, aromatic, fluoropolymers; low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyketone-, polyether-; low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT 134994-24-4P 213692-99-0P 213693-01-7P 213693-03-9P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(in manufacture of low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT 101-84-8, Diphenyl ether 2251-50-5, 2,3,4,5,6-Pentafluorobenzoyl chloride 87751-62-0, 4-Ethoxydiphenyl ether 134994-23-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in manufacture of low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)
- IT 213693-04-0P **213693-05-1P** 213693-06-2P 213693-07-3P  
213693-08-4P 213693-09-5P 213693-10-8P 213693-11-9P 213693-12-0P  
213693-13-1P **213693-14-2P** **213693-15-3P**  
**213693-16-4P** **213693-17-5P** 317335-38-9P 317335-39-0P  
323192-71-8P 326922-91-2P  
RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)



(low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)

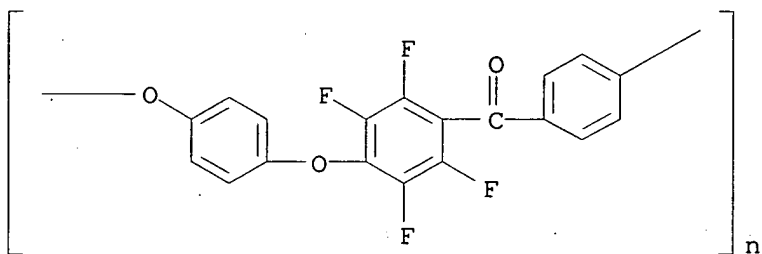
IT 213693-05-1P 213693-14-2P 213693-15-3P  
213693-16-4P 213693-17-5P

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)

(low dielec. fluorinated aromatic polyether ketone compns. with good heat resistance)

RN 213693-05-1 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)



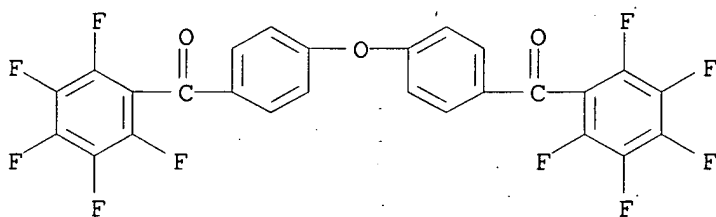
RN 213693-14-2 HCAPLUS

CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

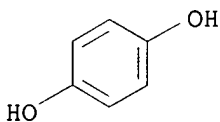
CMF C26 H8 F10 O3



CM 2

CRN 123-31-9

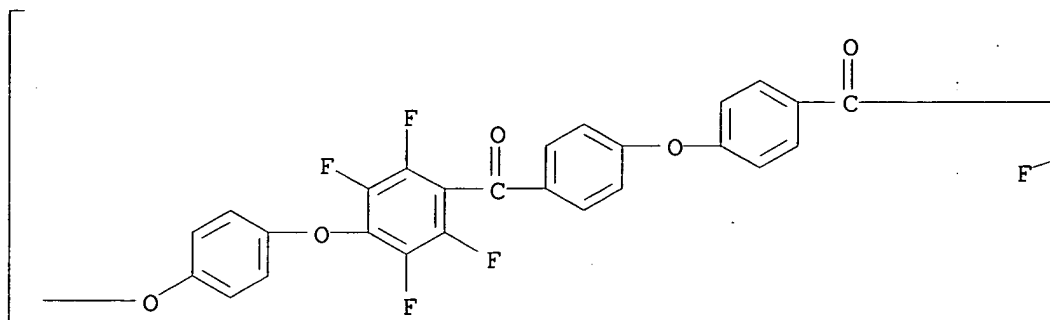
CMF C6 H6 O2



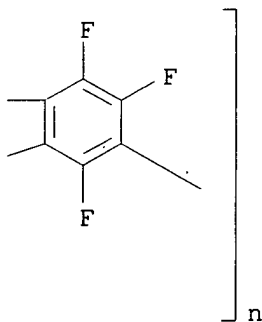
RN 213693-15-3 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)]  
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



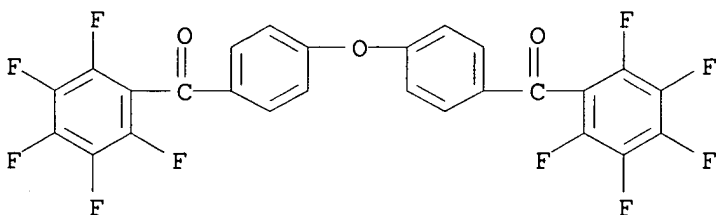
RN 213693-16-4 HCAPLUS

CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

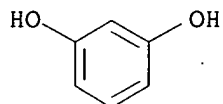
CMF C26 H8 F10 O3



CM 2

CRN 108-46-3

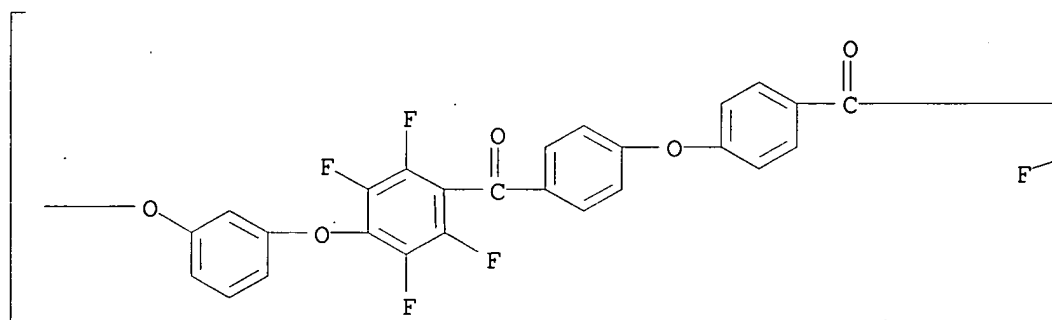
CMF C6 H6 O2



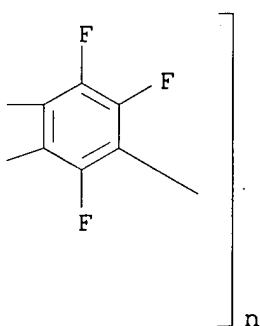
RN 213693-17-5 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)]  
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L48 ANSWER 14 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:25791 HCAPLUS

DN 134:86663

TI (2,3,4,5,6-Pentafluorobenzoyl)diphenyl ether compound, and  
fluorine-containing aryl ether ketone polymer

IN Kimura, Kunio; Yamashita, Yuhiko; Cassidy, Patrick E.; Fitch, John W.,  
III; Reddy, V. Sreenivasulu

PA Nippon Shokubai Co., Ltd., Japan  
 SO U.S., 22 pp., Cont.-in-part of U.S. Ser. No. 106,270, abandoned.  
 CODEN: USXXAM

DT Patent  
 LA English

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6172181 B1		20010109	US 1999-354976	19990716

PRAI US 1998-106270 19980629

OS MARPAT 134:86663

AB Ketonic di-Ph ethers of p-R1COC6H4OC6H4R2-p type compds. (R1 = 2,3,4,5,6-pentafluorobenzoyl; R2 = OH, pentafluorobenzoyl group) and polyether-polyketone polymers containing tetrafluorophenylene and phenylene groups are provided which have good mech. strength, toughness, elec. property, thermal oxidative stability and solubility. Thus, heating 0.5 g 2,3,4,5,6-pentafluoro-4'-hydroxybenzophenone with 0.36 ground K carbonate, 2 mL N-methyl-2-pyrrolidone and 1 mL PhMe at 160° while stirring for 3 h gave a polymer at 85% yield and having viscosity 0.5 g/dL in AcNMe2.

IC ICM C08G073-24

NCL 528401000

CC 35-7 (Chemistry of Synthetic High Polymers)

ST polyether polyketone polymer manuf pentafluoro hydroxybenzophenone monomer

IT Heat-resistant materials  
 (manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and fluorine-containing aryl ether ketone polymer)

IT Polyketones  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (polyether-, fluorine-containing; manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and fluorine-containing aryl ether ketone polymer)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (polyether-polyketone-; manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and fluorine-containing aryl ether ketone polymer)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (polyketone-, fluorine-containing; manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and fluorine-containing aryl ether ketone polymer)

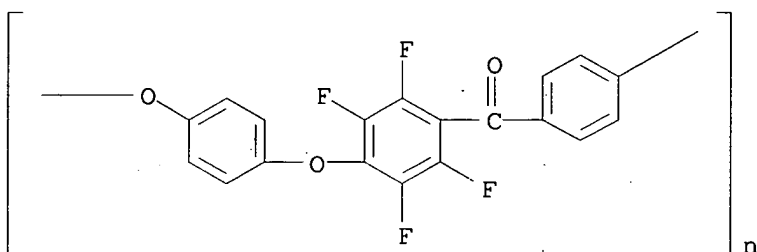
IT 213693-04-0P 213693-05-1P 213693-06-2P 213693-07-3P  
 213693-08-4P 213693-09-5P 213693-10-8P 213693-11-9P 213693-12-0P  
 213693-13-1P 213693-14-2P 213693-15-3P  
 213693-16-4P 213693-17-5P 317335-38-9P 317335-39-0P  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(Preparation)  
 (manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and fluorine-containing aryl ether ketone polymer)

IT 134994-24-4P 213693-01-7P 213693-03-9P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and fluorine-containing aryl ether ketone polymer)

IT 101-84-8, Diphenyl ether 2251-50-5 87751-62-0

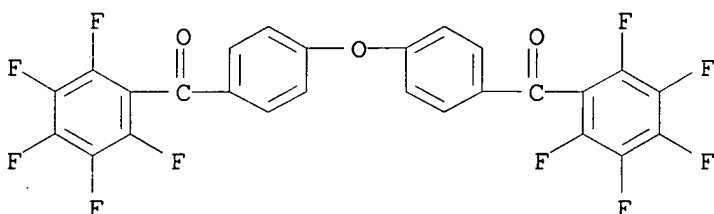
RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant; manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether  
 compound and fluorine-containing aryl ether ketone polymer)  
 IT 134994-23-3 213692-99-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting materials; manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl  
 ether compound and fluorine-containing aryl ether ketone polymer)  
 IT 213693-05-1P 213693-14-2P 213693-15-3P  
 213693-16-4P 213693-17-5P  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP  
 (Preparation)  
 (manufacture of (2,3,4,5,6-pentafluorobenzoyl)diphenyl ether compound and  
 fluorine-containing aryl ether ketone polymer)  
 RN 213693-05-1 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-  
 phenylene] (9CI) (CA INDEX NAME)



RN 213693-14-2 HCAPLUS  
 CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with  
 1,4-benzenediol (9CI) (CA INDEX NAME)

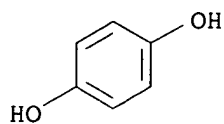
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CRN 213693-03-9  
 CMF C26 H8 F10 O3



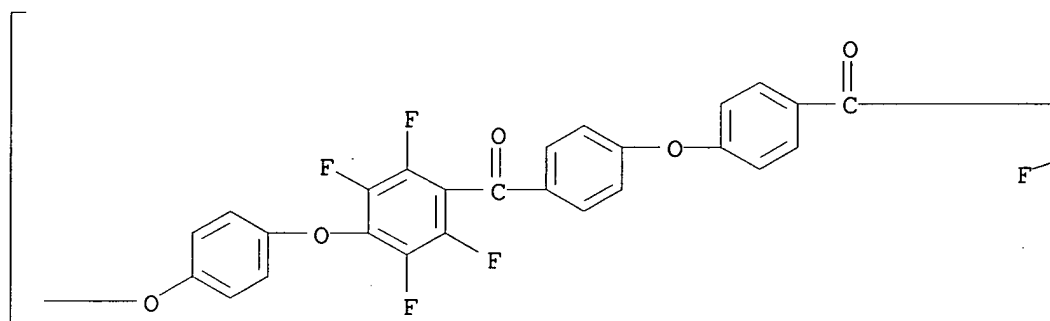
CM 2

CRN 123-31-9  
 CMF C6 H6 O2

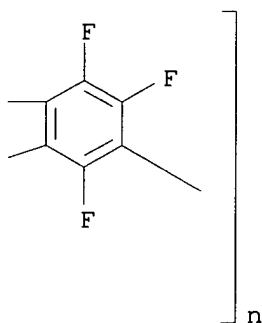


RN 213693-15-3 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



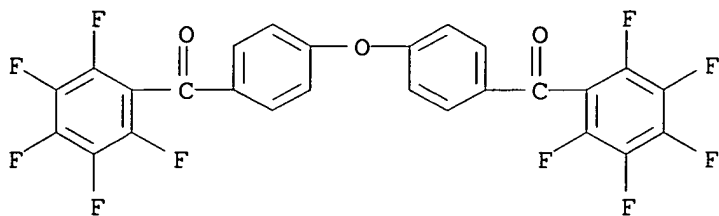
PAGE 1-B



RN 213693-16-4 HCAPLUS  
 CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

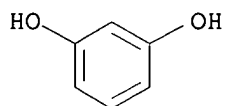
CRN 213693-03-9  
 CMF C26 H8 F10 O3



CM 2

CRN 108-46-3

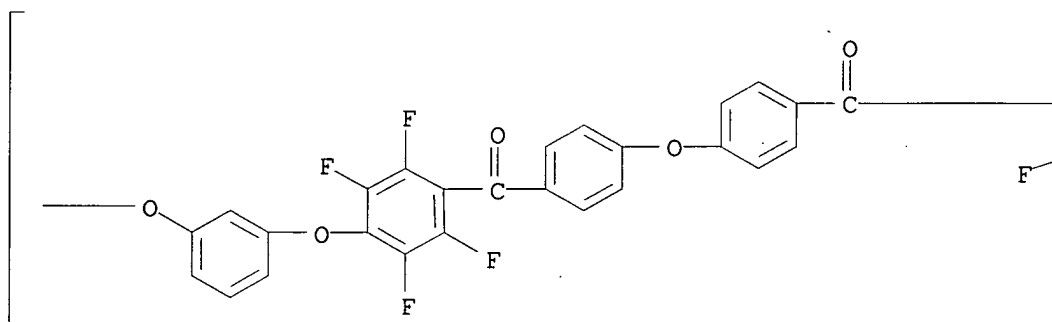
CMF C6 H6 O2



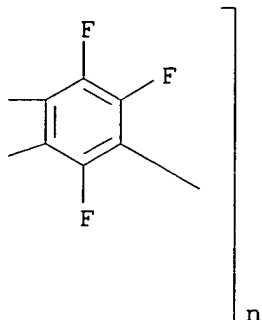
RN 213693-17-5 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)]  
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 15 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:12796 HCAPLUS

DN 134:72076

TI High-temperature polymer electrolytes

IN Narang, Subhash; Ventura, Susanna

PA Sri International, USA

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001001510	A1	20010104	WO 2000-US40282	20000621
	W: JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6248480	B1	20010619	US 1999-340778	19990628
PRAI	US 1999-340778	A	19990628		
	US 1998-91051P	P	19980629		
	US 1998-109154P	P	19981120		

AB An electrolyte is provided having a backbone that includes a plurality of aromatic constituents coupled together by at least one atom having a  $\pi$ -cloud, and in which a halogen atom and an ion exchange group are covalently bound directly to the backbone. Furthermore, the electrolyte is high temperature resistant and may comprise perhalogenated polymers, including perhalogenated polyphenylenes, perhalogenated polyamides, perhalogenated aromatic polyesters, perhalogenated polyimide, etc. Still further, the electrolyte may have acidic groups as ion exchange groups, including sulfonic acid groups, or phosphoric acid groups. A typical polymer electrolyte was manufactured by solid-liquid phase transfer polymerization of 2,3,5,6-tetrakis(benzylthio)-1,4-hydroquinone 18 h at 80° with bis(pentafluorophenyl) sulfone in the presence of K<sub>2</sub>CO<sub>3</sub> and 18-crown-6 in AcNMe<sub>2</sub>, reaction of resulting polymer 15 h with Cl in CH<sub>2</sub>Cl<sub>2</sub> containing HOAc and water, and conversion of the resulting sulfonyl chloride group-containing polymer to a sulfonic acid group-containing polymer by reaction with aqueous

NaOH

in DME.

IC ICM H01M010-39



ICS H01M010-40  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 72, 76  
 ST heat resistant sulfonic polymer electrolyte; benzylthiohydroquinone  
 fluorophenyl sulfone copolymer sulfo deriv manuf electrolyte; polyimide  
 halo heat resistant electrolyte; arom polyester halo heat resistant  
 electrolyte; polyamide halo heat resistant electrolyte; polyphenylene halo  
 heat resistant electrolyte; halopolymer heat resistant electrolyte;  
 phosphoric polymer heat resistant electrolyte  
 IT Polyesters, preparation  
 Polyimides, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (aromatic, fluorine-containing, sulfo-containing; high-temperature polymer  
 electrolytes)  
 IT Polyamides, preparation  
 Polycarbonates, preparation  
 Polyesters, preparation  
 Polyimides, preparation  
 Polysulfones, preparation  
 Polyureas  
 Polyurethanes, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (aromatic; high-temperature polymer electrolytes)  
 IT Plastic films  
 (films containing high-temperature polymer electrolytes)  
 IT Polybenzimidazoles  
 RL: POF (Polymer in formulation); USES (Uses)  
 (films; films containing high-temperature polymer electrolytes)  
 IT Polycarbonates, preparation  
 Polysulfones, preparation  
 Polyureas  
 Polyurethanes, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (fluorine-containing, aromatic, sulfo-containing; high-temperature polymer  
 electrolytes)  
 IT Polyamides, preparation  
 Polyquinolines  
 Polyquinoxalines  
 Polythiophenylenes  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (fluorine-containing, sulfo-containing; high-temperature polymer  
 electrolytes)  
 IT Polyoxyphenylenes  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (fluorine-containing; high-temperature polymer electrolytes)  
 IT Heat-resistant materials  
 Polyelectrolytes  
 (high-temperature polymer electrolytes)  
 IT Polyoxyphenylenes  
 Polyquinolines  
 Polyquinoxalines  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, sulfo-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polycarbonate-, aromatic, sulfo-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyester-, aromatic, sulfo-containing; high-temperature polymer electrolytes)

IT Polysulfones, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing, sulfo group-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polysulfone-, sulfo group-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyimide-, aromatic, sulfo-containing; high-temperature polymer electrolytes)

IT Ionic conductors  
 (polymeric; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyoxyphenylene-, high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyquinoline-, sulfo-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyquinoxaline-, sulfo-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polysulfone-, aromatic, sulfo-containing; high-temperature polymer electrolytes)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polysulfone-, fluorine-containing, sulfo group-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polythiophenylene-, sulfo-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyurea-, aromatic, sulfo-containing; high-temperature polymer electrolytes)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyurethane-, aromatic, sulfo-containing; high-temperature polymer electrolytes)

IT **316149-03-8P 316149-04-9P**  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (high-temperature polymer electrolytes)

IT 100-53-8, Benzyl mercaptan 118-75-2, Chloranil, reactions 1043-50-1, Bis(pentafluorophenyl) sulfide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer precursor; high-temperature polymer electrolytes)

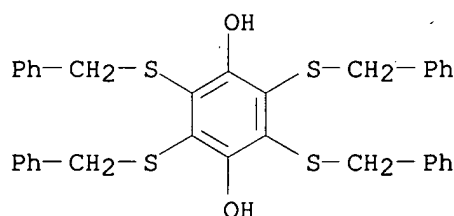
IT 18707-14-7P, Bis(pentafluorophenyl) sulfone 103512-92-1P, 2,3,5,6-Tetrakis(benzylthio)-1,4-hydroquinone  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; high-temperature polymer electrolytes)

IT **316149-03-8P 316149-04-9P**  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (high-temperature polymer electrolytes)

RN 316149-03-8 HCAPLUS  
 CN 1,4-Benzenediol, 2,3,5,6-tetrakis[(phenylmethyl)thio]-, polymer with 1,1'-sulfonylbis[2,3,4,5,6-pentafluorobenzene] (9CI) (CA INDEX NAME)

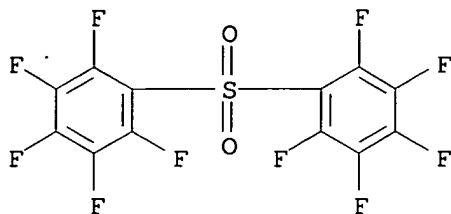
CM 1

CRN 103512-92-1  
 CMF C34 H30 O2 S4

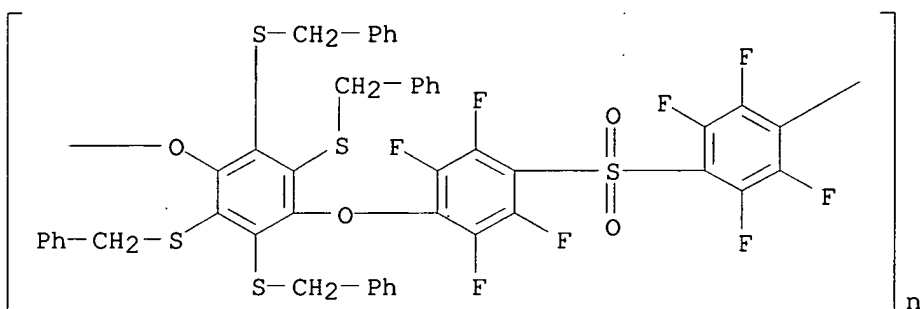


CM 2

CRN 18707-14-7  
 CMF C12 F10 O2 S



RN 316149-04-9 HCAPLUS  
 CN Poly[oxy[2,3,5,6-tetrakis[(phenylmethyl)thio]-1,4-phenylene]oxy(2,3,5,6-tetrafluoro-1,4-phenylene)sulfonyl(2,3,5,6-tetrafluoro-1,4-phenylene)]  
 (9CI) (CA INDEX NAME)



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 16 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:12792 HCAPLUS  
 DN 134:86656  
 TI High temperature polybenzazole and polyether electrolytes  
 IN Narang, Subhash; Ventura, Susanna; Koolpe, Gary  
 PA Sri International, USA  
 SO PCT Int. Appl., 17 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001001506	A1	20010104	WO 2000-US40278	20000621
	W: JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6176984	B1	20010123	US 1999-340777	19990628
	EP 1243043	A1	20020925	EP 2000-957985	20000621
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
	JP 2003503599	T2	20030128	JP 2001-506630	20000621
PRAI	US 1999-340777	A	19990628		
	US 1998-91051P	P	19980629		
	US 1998-109154P	P	19981120		
	WO 2000-US40278	W	20000621		

- AB High temperature polybenzazole and polyether polymer electrolytes are provided. High temperature polybenzazole polymer electrolytes may comprise a benzobisoxazole, a benzobisthiazole, a benzobisimidazole, a difluorodisulfonated Ph ring or a sulfonated bisphenylether. High temperature polyether polymers comprise a persulfonated Ph ring, and a substituted Ph ring or a substituted bisphenylsulfonyl ring system.
- IC ICM H01M006-14  
ICS H01M006-18
- CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 52
- ST fluoro polyether sulfo electrolyte; polybenzazole electrolyte
- IT Polyethers, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(fluorine- and sulfo-containing; high temperature polybenzazole and polyether electrolytes)
- IT Polymer electrolytes  
(high temperature polybenzazole and polyether electrolytes)
- IT Polybenzoxazoles  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(high temperature polybenzazole and polyether electrolytes)
- IT Polybenzimidazoles  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(high temperature polybenzazole and polyether electrolytes)
- IT Polymer blends  
RL: TEM (Technical or engineered material use); USES (Uses)  
(high temperature polybenzazole and polyether electrolytes)
- IT Fluoropolymers, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(polyether-, sulfo-containing; high temperature polybenzazole and polyether electrolytes)
- IT **316149-03-8P 316149-04-9P**  
RL: **IMF (Industrial manufacture)**; POF (Polymer in formulation); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(high temperature polybenzazole and polyether electrolytes)
- IT 18707-14-7P, Bis(pentafluorophenyl)sulfone 103512-92-1P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(high temperature polybenzazole and polyether electrolytes)
- IT **316383-54-7P 316383-56-9P 316383-58-1P**  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(high temperature polybenzazole and polyether electrolytes)
- IT 32075-68-6  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(high temperature polybenzazole and polyether electrolytes)
- IT 100-53-8, Benzyl mercaptan 118-75-2, Chloranil, reactions 1043-50-1, Bis(pentafluorophenyl)sulfide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(high temperature polybenzazole and polyether electrolytes)
- IT **316149-03-8P 316149-04-9P**  
RL: **IMF (Industrial manufacture)**; POF (Polymer in formulation); TEM (Technical or engineered material use); **PREP (Preparation)**;

USES (Uses)

(high temperature polybenzazole and polyether electrolytes)

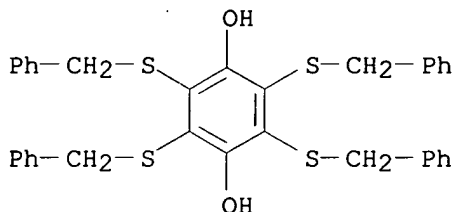
RN 316149-03-8 HCAPLUS

CN 1,4-Benzenediol, 2,3,5,6-tetrakis[(phenylmethyl)thio]-, polymer with 1,1'-sulfonylbis[2,3,4,5,6-pentafluorobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 103512-92-1

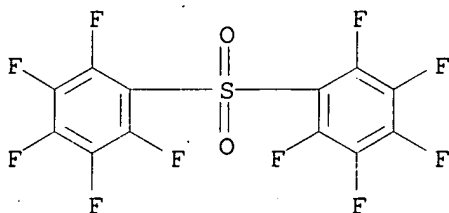
CMF C34 H30 O2 S4



CM 2

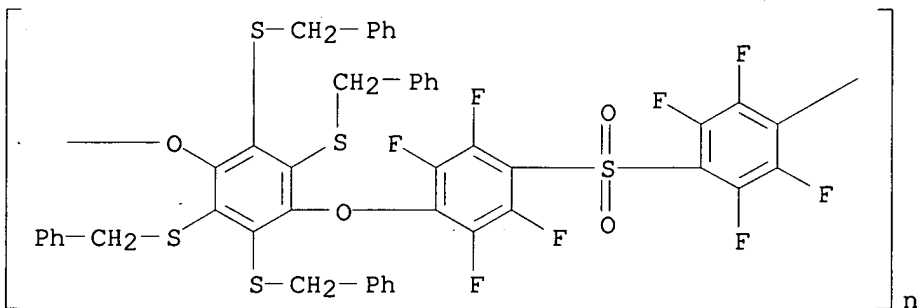
CRN 18707-14-7

CMF C12 F10 O2 S



RN 316149-04-9 HCAPLUS

CN Poly[oxy[2,3,5,6-tetrakis[(phenylmethyl)thio]-1,4-phenylene]oxy(2,3,5,6-tetrafluoro-1,4-phenylene)sulfonyl(2,3,5,6-tetrafluoro-1,4-phenylene)] (9CI) (CA INDEX NAME)



IT 316383-54-7P 316383-56-9P 316383-58-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(high temperature polybenzazole and polyether electrolytes)

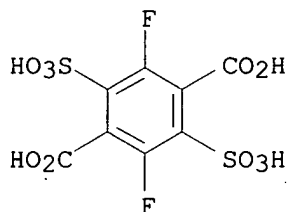
RN 316383-54-7 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, 2,5-difluoro-3,6-disulfo-, dipotassium salt, polymer with 4,6-diamino-2,5-difluoro-1,3-benzenediol dihydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 316383-53-6

CMF C8 H4 F2 O10 S2 . 2 K

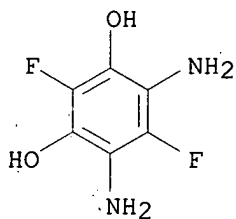


● 2 K

CM 2

CRN 316383-52-5

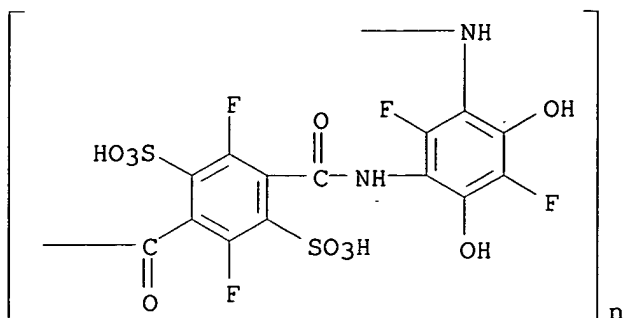
CMF C6 H6 F2 N2 O2 . 2 Cl H



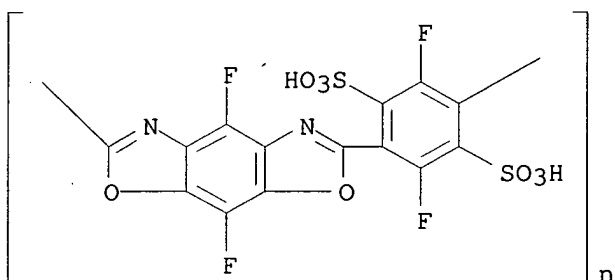
● 2 HCl

RN 316383-56-9 HCAPLUS

CN Poly[imino(2,5-difluoro-4,6-dihydroxy-1,3-phenylene)iminocarbonyl(2,5-difluoro-3,6-disulfo-1,4-phenylene)carbonyl] (9CI) (CA INDEX NAME)



RN 316383-58-1 HCAPLUS  
 CN Poly[(4,8-difluorobenzo[1,2-d:5,4-d']bisoxazole-2,6-diyl)(2,5-difluoro-3,6-disulfo-1,4-phenylene)] (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 17 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2000:156352 HCAPLUS  
 DN 133:120976  
 TI Synthesis, characterization and property of phenolphthalein poly(cyanoaryl ether) copolymers  
 AU Xu, Gang  
 CS Dep. Chem., Jiangxi Normal Univ., Nanchang, 330027, Peop. Rep. China  
 SO Jiangxi Shifan Daxue Xuebao, Ziran Kexueban (1999), 23(4), 352-355  
 CODEN: JSXKF3; ISSN: 1000-5862  
 PB Jiangxi Shifan Daxue Xuebao Zazhishe  
 DT Journal  
 LA Chinese  
 AB A series of poly(cyanoaryl ether) copolymers containing phenolphthalein segments was successfully synthesized. The structure and thermal property of the copolymers were studied by IR, DSC and TGA. The solubility and mech. properties were also tested. The copolymer has very high glass transition temperature ( $T_g > 200^\circ$ ), high tensile strength ( $\sigma_Y > 104$  MPa), good fracture toughness (elongation at break above 18%) and satisfactory solubility  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 5  
 ST phenolphthalein polycyanoaryl ether prepn property  
 IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, cardo; synthesis, characterization and property of phenolphthalein poly(cyanoaryl ether) copolymers)



IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (cardo, aromatic; synthesis, characterization and property of  
 phenolphthalein poly(cyanoaryl ether) copolymers)

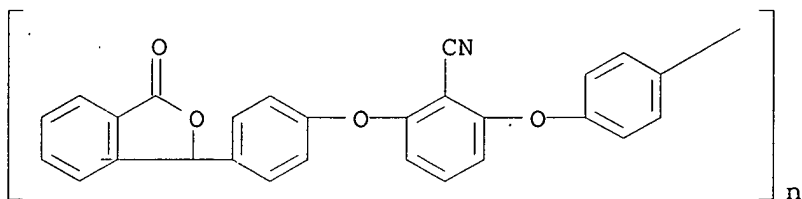
IT Cardo polymers  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyethers, aromatic; synthesis, characterization and property of  
 phenolphthalein poly(cyanoaryl ether) copolymers)

IT Fracture toughness  
 Glass transition temperature  
 Polymerization  
 Solubility  
 Tensile strength  
 (synthesis, characterization and property of phenolphthalein  
 poly(cyanoaryl ether) copolymers)

IT **111867-29-9P 146247-71-4P 210105-61-6P**  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP**  
**(Preparation)**  
 (synthesis, characterization and property of phenolphthalein  
 poly(cyanoaryl ether) copolymers)

IT **111867-29-9P 210105-61-6P**  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP**  
**(Preparation)**  
 (synthesis, characterization and property of phenolphthalein  
 poly(cyanoaryl ether) copolymers)

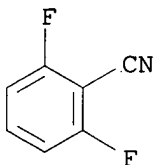
RN 111867-29-9 HCAPLUS  
 CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-cyano-1,3-  
 phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 210105-61-6 HCAPLUS  
 CN Benzonitrile, 2,6-difluoro-, polymer with 1,3-benzenediol and  
 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA INDEX NAME)

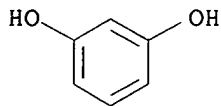
CM 1

CRN 1897-52-5  
 CMF C7 H3 F2 N



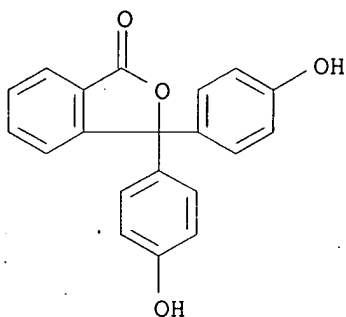
CM 2

CRN 108-46-3  
CMF C6 H6 O2



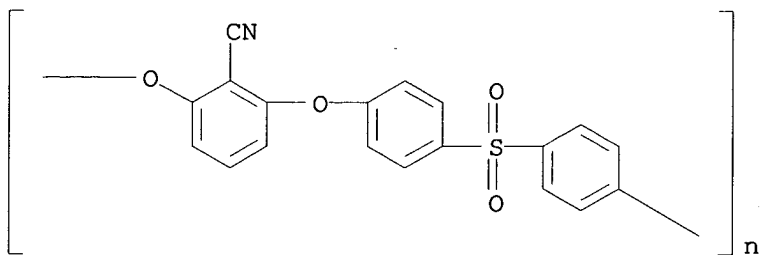
CM 3

CRN 77-09-8  
CMF C20 H14 O4



L48 ANSWER 18 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:79149 HCAPLUS  
DN 130:252974  
TI Synthesis and characterization of poly(arylene ether sulfone)s with cyano pendant group  
AU Tang, An-Bin; Jiang, Qi-Tai; Zhu, Rong-Qi; Zhou, Zhong-Xiao; Cai, Xing-Xian  
CS Department of Polymer Science and Materials, Sichuan Union University, Chengdu, 610065, Peop. Rep. China  
SO Hecheng Huaxue (1998), 6(4), 376-382  
CODEN: HEHUE2; ISSN: 1005-1511  
PB Hecheng Huaxue Bianjibu  
DT Journal  
LA Chinese  
AB The Poly(arylene ether sulfones) with different structural unit and cyano content were prepared from 2,6-dihalobenzonitrile, 4,4'-dichlorodiphenyl sulfone, 4,4'-dihydroxydiphenyl sulfone, resorcinol, hydroquinone and 2,2-bis(p-hydroxyphenyl)propane. The structure of the polymers were characterized by IR and <sup>13</sup>C NMR. The effects of structural unit and cyano content on properties of poly(arylene ether sulfone)s were also discussed.  
CC 37-3 (Plastics Manufacture and Processing)  
ST cyano contg polyether polysulfone prepn characterization; dihalobenzonitrile polyether polysulfone prepn characterization; dichlorodiphenyl sulfone copolymer prepn characterization; dihydroxydiphenyl sulfone copolymer prepn characterization; resorcinol copolymer polyether polysulfone; hydroquinone copolymer polyether polysulfone; bisphenol A copolymer polyether polysulfone

- IT Glass transition temperature  
(of cyano group-containing polyether-polysulfones)
- IT Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, cardo, cyano group-containing; preparation and characterization of)
- IT Polysulfones, preparation  
Polysulfones, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, cyano-containing; preparation and characterization of)
- IT Cardo polymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfones, cyano group-containing; preparation and characterization of)
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polysulfone-, cardo, cyano group-containing; preparation and characterization of)
- IT Polyethers, preparation  
Polyethers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polysulfone-, cyano-containing; preparation and characterization of)
- IT **88291-14-9P** 105133-67-3P **205870-03-7P**,  
2,6-Difluorobenzonitrile-4,4'-dihydroxydiphenyl sulfone-resorcinol  
copolymer **221661-35-4P**, 2,6-Difluorobenzonitrile-4,4'-  
dihydroxydiphenyl sulfone-hydroquinone copolymer **221661-36-5P**, Bisphenol  
A-2,6-difluorobenzonitrile-4,4'-dihydroxydiphenyl sulfone copolymer  
**221661-37-6P**, 2,6-Difluorobenzonitrile-4,4'-dihydroxydiphenyl  
sulfone-phenolphthalein copolymer  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation and characterization of)
- IT **88291-14-9P** **205870-03-7P**, 2,6-Difluorobenzonitrile-4,4'-  
dihydroxydiphenyl sulfone-resorcinol copolymer **221661-35-4P**,  
2,6-Difluorobenzonitrile-4,4'-dihydroxydiphenyl sulfone-hydroquinone  
copolymer  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation and characterization of)
- RN 88291-14-9 HCAPLUS
- CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylenesulfonyl-1,4-phenylene]  
(9CI) (CA INDEX NAME)



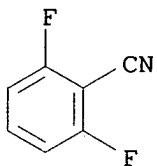
RN 205870-03-7 HCAPLUS

CN Benzonitrile, 2,6-difluoro-, polymer with 1,3-benzenediol and 4,4'-sulfonylbis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 1897-52-5

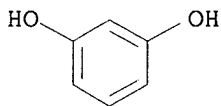
CMF C7 H3 F2 N



CM 2

CRN 108-46-3

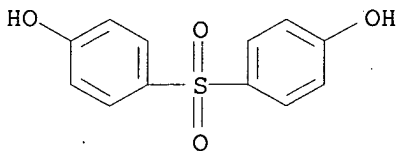
CMF C6 H6 O2



CM 3

CRN 80-09-1

CMF C12 H10 O4 S



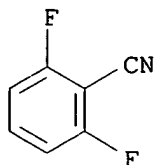
RN 221661-35-4 HCAPLUS

CN Benzonitrile, 2,6-difluoro-, polymer with 1,4-benzenediol and 4,4'-sulfonylbis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 1897-52-5

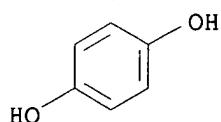
CMF C7 H3 F2 N



CM 2

CRN 123-31-9

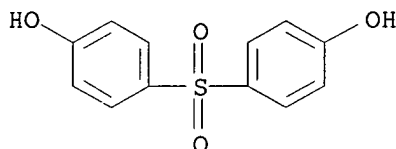
CMF C6 H6 O2



CM 3

CRN 80-09-1

CMF C12 H10 O4 S



L48 ANSWER 19 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1998:532324 HCAPLUS  
 DN 129:260978  
 TI New polymers derived from 2,3,4,5,6-pentafluorobenzoic acid  
 AU Kimura, Kunio; Yamashita, Yuhiko; Cassidy, Patrick E.; Fitch, John W.,  
 III; Reddy, V. Sreenivasulu; Sakaguchi, Yoshimitu  
 CS Faculty of Environmental Science and Technology, Okayama University,  
 Okayama, 700-8530, Japan  
 SO Polymer Preprints (American Chemical Society, Division of Polymer  
 Chemistry) (1998), 39(2), 790-791  
 CODEN: ACPPAY; ISSN: 0032-3934  
 PB American Chemical Society, Division of Polymer Chemistry  
 DT Journal  
 LA English  
 AB Fluoropolymer-polyether-polyketones were obtained by homopolycondensation  
 of 4-hydroxy-4'-(pentafluorobenzoyl)diphenyl ether and by  
 copolycondensation of 4,4'-bis(pentafluorobenzoyl)diphenyl ether with  
 benzenediols or bisphenols. The polymers have very good heat resistance,  
 with 10% weight loss temps.  $\geq 500^\circ$ .  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST fluoropolymer polyether polyketone prepn thermal stability  
 IT Polyketones

Polyketones  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyketones  
 Polyketones  
 Polyketones  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, cardo, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyketones  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, fluorine-containing, aromatic; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyketones  
 Polyketones  
 Polyketones  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polyketone-, aromatic; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polyketone-; preparation of thermally stable fluoropolymer-  
 polyether-polyketones)

IT Cardo polymers  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-polyketones, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyethers, preparation  
 Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-, aromatic, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyethers, preparation  
 Polyethers, preparation  
 Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-, cardo, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-, fluorine-containing, aromatic; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT Polyethers, preparation  
 Polyethers, preparation  
 Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-, fluorine-containing; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

IT 213692-99-0P, 4-Ethoxy-4'-(pentafluorobenzoyl)diphenyl ether  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (monomer intermediate; preparation of thermally stable fluoropolymer-  
 polyether-polyketones)

IT 101-84-8 2251-50-5, Pentafluorobenzoyl chloride 87751-62-0,

4-Ethoxydiphenyl ether  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (monomer starting material; preparation of thermally stable  
 fluoropolymer-polyether-polyketones)

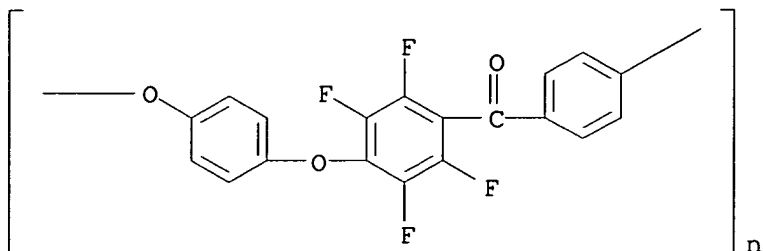
IT 213693-01-7P, 4-Hydroxy-4'-(pentafluorobenzoyl)diphenyl ether  
 213693-03-9P, 4,4'-Bis(pentafluorobenzoyl)diphenyl ether  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (monomer; preparation of thermally stable fluoropolymer-polyether-  
 polyketones)

IT 213693-04-0P, 4-Hydroxy-4'-(pentafluorobenzoyl)diphenyl ether homopolymer  
 213693-05-1P, 4-Hydroxy-4'-(pentafluorobenzoyl)diphenyl ether  
 homopolymer, SRU 213693-06-2P, 2,2-Bis(4-hydroxyphenyl)hexafluoropropane-  
 4,4'-bis(pentafluorobenzoyl)diphenyl ether copolymer 213693-07-3P,  
 2,2-Bis(4-hydroxyphenyl)hexafluoropropane-4,4'-  
 bis(pentafluorobenzoyl)diphenyl ether copolymer, SRU 213693-08-4P,  
 4,4'-Bis(pentafluorobenzoyl)diphenyl ether-bisphenol A copolymer-  
 213693-09-5P, 4,4'-Bis(pentafluorobenzoyl)diphenyl ether-bisphenol A  
 copolymer, SRU 213693-10-8P, 9,9-Bis(4-hydroxyphenyl)fluorene-4,4'-  
 bis(pentafluorobenzoyl)diphenyl ether copolymer 213693-11-9P,  
 9,9-Bis(4-hydroxyphenyl)fluorene-4,4'-bis(pentafluorobenzoyl)diphenyl  
 ether copolymer, SRU 213693-12-0P, 4,4'-Bis(pentafluorobenzoyl)diphenyl  
 ether-4,4'-methylenediphenol copolymer 213693-13-1P,  
 4,4'-Bis(pentafluorobenzoyl)diphenyl ether-4,4'-methylenediphenol  
 copolymer, SRU 213693-14-2P, 4,4'-Bis(pentafluorobenzoyl)diphenyl  
 ether-hydroquinone copolymer 213693-15-3P,  
 4,4'-Bis(pentafluorobenzoyl)diphenyl ether-hydroquinone copolymer, SRU  
 213693-16-4P, 1,3-Benzenediol-4,4'-bis(pentafluorobenzoyl)diphenyl  
 ether copolymer 213693-17-5P, 1,3-Benzenediol-4,4'-  
 bis(pentafluorobenzoyl)diphenyl ether copolymer, SRU  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of thermally stable fluoropolymer-polyether-polyketones)

IT 127-19-5, Dimethylacetamide 872-50-4, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent effect; preparation of thermally stable fluoropolymer-polyether-  
 polyketones)

IT 213693-05-1P, 4-Hydroxy-4'-(pentafluorobenzoyl)diphenyl ether  
 homopolymer, SRU 213693-14-2P, 4,4'-  
 Bis(pentafluorobenzoyl)diphenyl ether-hydroquinone copolymer  
 213693-15-3P, 4,4'-Bis(pentafluorobenzoyl)diphenyl  
 ether-hydroquinone copolymer, SRU 213693-16-4P,  
 1,3-Benzenediol-4,4'-bis(pentafluorobenzoyl)diphenyl ether copolymer  
 213693-17-5P, 1,3-Benzenediol-4,4'-bis(pentafluorobenzoyl)diphenyl  
 ether copolymer, SRU  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of thermally stable fluoropolymer-polyether-polyketones)

RN 213693-05-1 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-  
 phenylene] (9CI) (CA INDEX NAME)



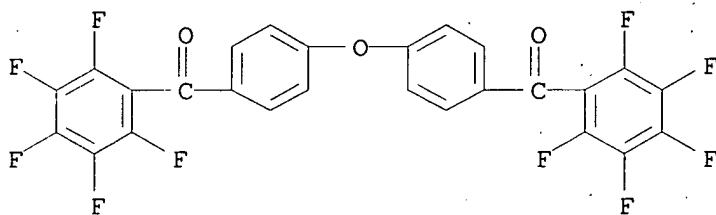
RN 213693-14-2 HCAPLUS

CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

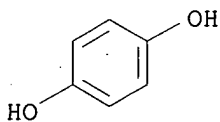
CMF C26 H8 F10 O3



CM 2

CRN 123-31-9

CMF C6 H6 O2

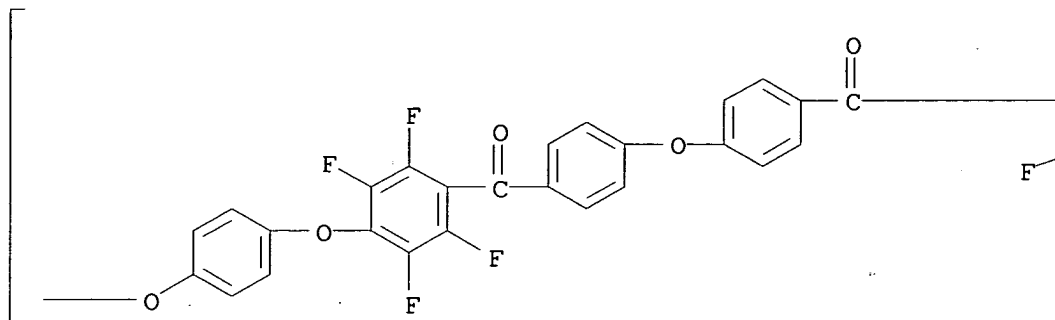


RN 213693-15-3 HCAPLUS

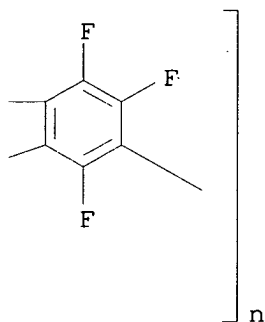
CN Poly[oxy-1,4-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)] (9CI) (CA INDEX NAME)



PAGE 1-A



PAGE 1-B



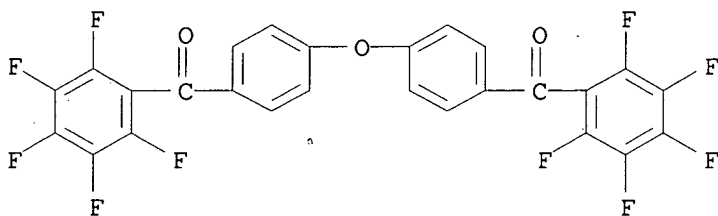
RN 213693-16-4 HCAPLUS

CN Methanone, (oxydi-4,1-phenylene)bis[(pentafluorophenyl)-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 213693-03-9

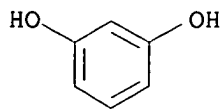
CMF C26 H8 F10 O3



CM 2

CRN 108-46-3

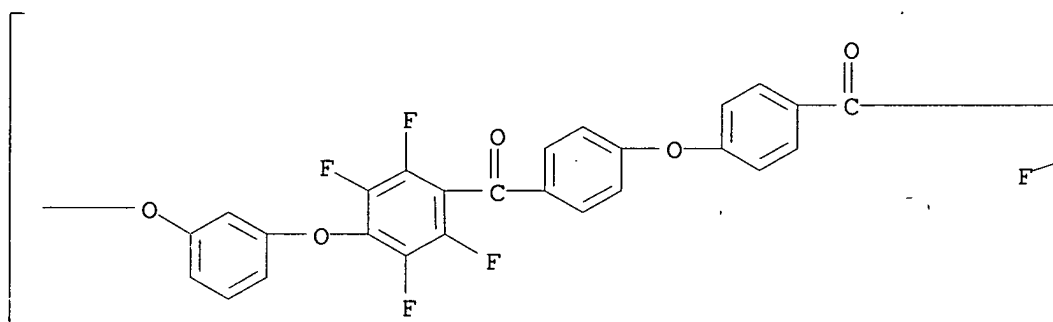
CMF C6 H6 O2



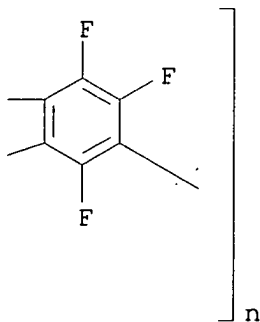
RN 213693-17-5 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy(2,3,5,6-tetrafluoro-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl(2,3,5,6-tetrafluoro-1,4-phenylene)]  
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 20 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1998:176533 HCAPLUS  
DN 128:244969  
TI Silicon-free bisphenol-type polyethers as electric insulator film  
precursors and their manufacture  
IN Ito, Toshio; Kosuga, Maki  
PA Oki Electric Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10074751	A2	19980317	JP 1996-229893	19960830
	JP 3195248	B2	20010806		
PRAI	JP 1996-229893		19960830		

AB Title linear polyethers consist of (A) bisphenol units having 2 benzene rings, each of which is directly linked to O and (B) aryl-type units for linking the bisphenol units. The polymers are useful as precursors of intermediate elec. insulator films in semiconductor devices and the resulting films can be subjected to high temperature reactive ion etching and they leave no Si oxide residue after etching. The polyethers are manufactured by polymerizing aromatic monomers corresponding to the unit A and compds.

having

≥1 benzene rings which are directly linked to ≥2 halogens in the presence of basic catalysts. Thus, 28.6 g 2,2'-binaphthol and 33.4 g perfluorobiphenyl were polymerized in N,N-dimethylacetamide in the presence of K<sub>2</sub>CO<sub>3</sub> at 80° under N to give title polymer, 5 g of which was dissolved in 50 mL 2-methoxyethyl acetate, spin-coated on a Si substrate, heated in air at 200° for 30 min, and baked at 360° in N for 1 h to give an elec. insulator film having sp. dielec. constant 2.70, glass-transition temperature 250°, and no weight degradation at 400-500°.

IC ICM H01L021-312

ICS C08G065-40; H01L021-768

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 76

ST silicon free bisphenol polyether elec insulator; binaphthol perfluorobiphenyl copolymer elec insulator; heat resistant polyether elec insulator; semiconductor device intermediate elec insulator

IT Electric insulators

Heat-resistant materials

Polymerization catalysts

Semiconductor devices

(silicon-free bisphenol-type polyethers as precursors for elec. insulators in semiconductor devices)

IT Polyethers, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(silicon-free bisphenol-type polyethers as precursors for elec. insulators in semiconductor devices)

IT 584-08-7, Potassium carbonate

RL: CAT (Catalyst use); USES (Uses)

(condensation polymerization catalysts; silicon-free bisphenol-type polyethers

as precursors for elec. insulators in semiconductor devices)

IT 204910-54-3P, 2,2'-Binaphthol-perfluorobiphenyl copolymer 204910-55-4P,

2,2'-Binaphthol-perfluorobiphenyl copolymer, sru 204910-56-5P,

2,2'-Biphenol-perfluorobiphenyl copolymer 204910-57-6P,

2,2'-Biphenol-perfluorobiphenyl copolymer, sru

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(silicon-free bisphenol-type polyethers as precursors for elec. insulators in semiconductor devices)

IT 204910-58-7P 204910-59-8P 204910-60-1P, 1,5-Dihydroxynaphthalene-

perfluorobiphenyl copolymer 204910-61-2P, 1,5-Dihydroxynaphthalene-

perfluorobiphenyl copolymer, sru 204910-62-3P, 2,6-Dihydroxynaphthalene-

perfluorobiphenyl copolymer 204910-63-4P, 2,6-Dihydroxynaphthalene-

perfluorobiphenyl copolymer, sru **204910-64-5P**

**204910-65-6P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)

(silicon-free bisphenol-type polyethers as precursors for elec.  
insulators in semiconductor devices)

IT **204910-64-5P 204910-65-6P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)

(silicon-free bisphenol-type polyethers as precursors for elec.  
insulators in semiconductor devices)

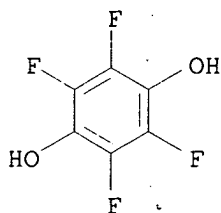
RN 204910-64-5 HCAPLUS

CN 1,4-Benzenediol, 2,3,5,6-tetrafluoro-, polymer with  
2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 771-63-1

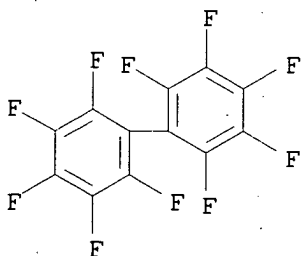
CMF C6 H2 F4 O2



CM 2

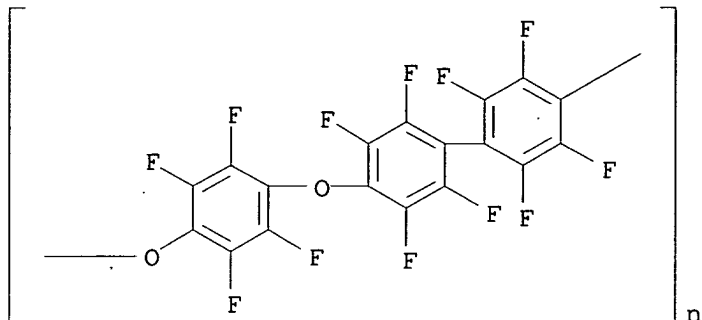
CRN 434-90-2

CMF C12 F10



RN 204910-65-6 HCAPLUS

CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy(2,2',3,3',5,5',6,6'-  
octafluoro[1,1'-biphenyl]-4,4'-diyl)] (9CI) (CA INDEX NAME)



L48 ANSWER 21 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:773084 HCAPLUS

DN 123:287316

TI Manufacture of crystalline polyethers with heat resistance and mechanical strength

IN Kayano, Chikafumi

PA Idemitsu Material Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07138360	A2	19950530	JP 1993-309653	19931117
PRAI	JP 1993-309653		19931117		

AB The polymers are manufactured by reacting aromatic dihalides with aromatic dihydroxy

comps. in amide-type neutral polar solvents under pressure in the presence of alkali metal comps. while removing H<sub>2</sub>O and optionally CO<sub>2</sub>. Thus, 4,4'-difluorobenzophenone 106, hydroquinone 53, and K<sub>2</sub>CO<sub>3</sub> 70 g were heated in N-methyl-2-pyrrolidone at 180-260° and 2.5 kg/cm<sup>2</sup> for 70 min under N to give a polyether showing melt index (4850 g load, 400°) 12.5 g/10 min, T<sub>g</sub> 141°, m.p. 394°, and 5%-weight loss temperature (in air) 561°.

IC ICM C08G065-40

CC 35-5 (Chemistry of Synthetic High Polymers)

ST heat resistance cryst polyether manuf; mech strength cryst polyether manuf; fluorobenzophenone hydroxyquinone copolymer polyether manuf

IT Polyethers, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of crystalline polyethers with good heat resistance and mech. strength)

IT 29658-26-2P, 4,4'-Difluorobenzophenone-hydroquinone copolymer

**31694-16-3P**, 4,4'-Difluorobenzophenone-hydroquinone copolymer, sru

**94196-53-9P** 94196-69-7P, 2,6-Dichlorobenzonitrile-4,4'-bisphenol

copolymer **111867-27-7P**, 2,6-Dichlorobenzonitrile-resorcinol

copolymer, sru **113506-35-7P**, 2,6-Dichlorobenzonitrile-resorcinol

copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of crystalline polyethers with good heat resistance and mech. strength)

IT **31694-16-3P**, 4,4'-Difluorobenzophenone-hydroquinone copolymer, sru

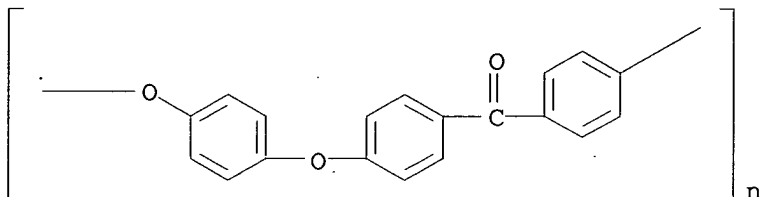
**94196-53-9P 111867-27-7P**, 2,6-Dichlorobenzonitrile-resorcinol copolymer, sru **113506-35-7P**, 2,6-Dichlorobenzonitrile-resorcinol copolymer

RL: **IMF (Industrial manufacture); PREP (Preparation)**

(manufacture of crystalline polyethers with good heat resistance and mech. strength)

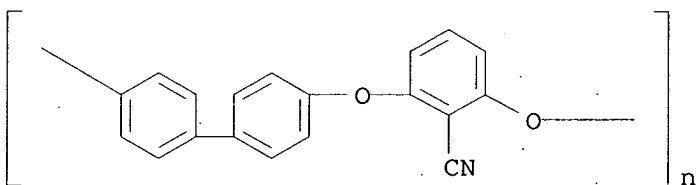
RN 31694-16-3 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



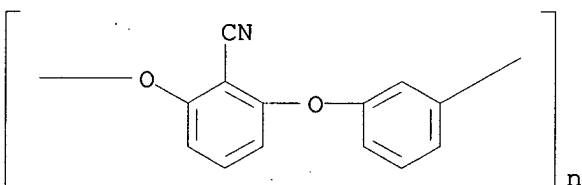
RN 94196-53-9 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 111867-27-7 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



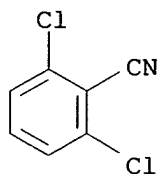
RN 113506-35-7 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 1194-65-6

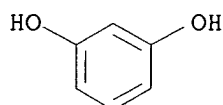
CMF C7 H3 Cl2 N



CM 2

CRN 108-46-3

CMF C6 H6 O2



- L48 ANSWER 22 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1994:484111 HCAPLUS  
 DN 121:84111  
 TI Synthesis and characterization of new poly(arylene ethers) with low dielectric constant  
 AU Mercer, Frank W.; Coffin, Chris; Duff, David W.  
 CS Raychem Corp., Menlo Park, CA, 94025-1164, USA  
 SO ACS Symposium Series (1994), 537(Polymer for Microelectronics), 546-53  
 CODEN: ACSMC8; ISSN: 0097-6156  
 DT Journal  
 LA English  
 AB Six F-containing poly(arylene ethers) were prepared by polymerizing decafluorobiphenyl with 4,4'-(hexafluoroisopropylidene)diphenol (bisphenol AF), 9,9-bis(4-hydroxyphenyl)fluorene, 1,1-bis(4-hydroxyphenyl)-1-phenylethane (bisphenol AP), phenolphthalein, fluorescein, and Me 3,5-dihydroxybenzoate. The polymers exhibited low dielec. consts. and moisture absorption and excellent thermal and mech. properties and may be useful in electronic applications.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST fluorine contg polyether prepn property; cardo polyether fluorine contg; dielec const fluorine contg polyether; polymn bisphenol decafluoro biphenyl  
 IT Dielectric constant and dispersion  
 (of decafluorobiphenyl-based polyethers)  
 IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, cardo, fluorine-containing, preparation and properties of)  
 IT Polyethers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, fluorine-containing, preparation and properties of)  
 IT Fluoropolymers  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic, preparation and properties of)  
 IT Fluoropolymers  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, aromatic, cardo, preparation and properties of)

IT Cardo polymers  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (polyethers, aromatic, fluorine-containing, preparation and properties of)

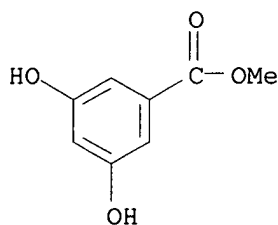
IT 136835-79-5P, Bisphenol AF-decafluorobiphenyl copolymer, SRU  
 136835-82-0P, 9,9-Bis(4-hydroxyphenyl)fluorene-decafluorobiphenyl  
 copolymer, SRU 136835-84-2P, Bisphenol AP-decafluorobiphenyl copolymer,  
 SRU 136875-49-5P, Bisphenol AF-decafluorobiphenyl copolymer  
 136875-53-1P, 9,9-Bis(4-hydroxyphenyl)fluorene-decafluorobiphenyl  
 copolymer 136875-63-3P, Bisphenol AP-decafluorobiphenyl copolymer  
 151314-91-9P, Decafluorobiphenyl-phenolphthalein copolymer, SRU  
 151314-92-0P, Decafluorobiphenyl-fluorescein copolymer, SRU  
 151339-85-4P, Decafluorobiphenyl-phenolphthalein copolymer 151339-86-5P,  
 Decafluorobiphenyl-fluorescein copolymer **156589-14-9P**,  
 Decafluorobiphenyl-methyl 3,5-dihydroxybenzoate copolymer  
**156589-15-0P**, Decafluorobiphenyl-methyl 3,5-dihydroxybenzoate  
 copolymer, SRU  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP**  
**(Preparation)**  
 (preparation and properties of)

IT **156589-14-9P**, Decafluorobiphenyl-methyl 3,5-dihydroxybenzoate  
 copolymer **156589-15-0P**, Decafluorobiphenyl-methyl  
 3,5-dihydroxybenzoate copolymer, SRU  
 RL: PRP (Properties); **SPN (Synthetic preparation); PREP**  
**(Preparation)**  
 (preparation and properties of)

RN 156589-14-9 HCAPLUS  
 CN Benzoic acid, 3,5-dihydroxy-, methyl ester, polymer with  
 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

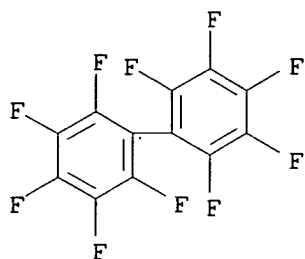
CRN 2150-44-9  
 CMF C8 H8 O4



CM 2

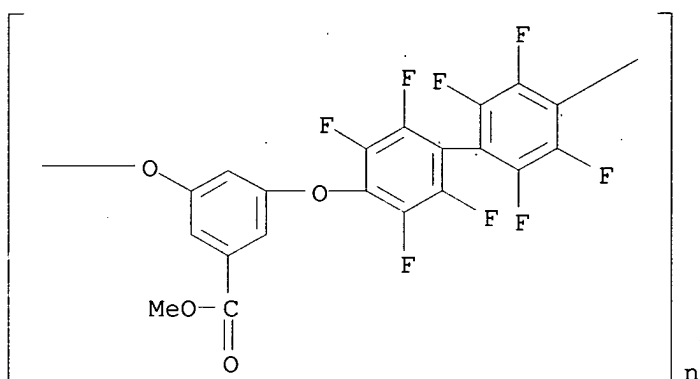
CRN 434-90-2  
 CMF C12 F10





RN 156589-15-0 HCAPLUS

CN Poly[oxy[5-(methoxycarbonyl)-1,3-phenylene]oxy(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)] (9CI) (CA INDEX NAME)



L48 ANSWER 23 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:324482 HCAPLUS

DN 120:324482

TI Preparation of aromatic poly(ether nitriles)

IN Matsuo, Shigeru

PA Idemitsu Kosan Co, Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

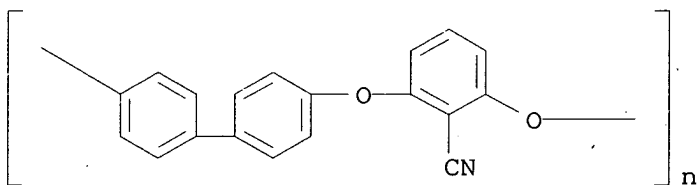
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05339364	A2	19931221	JP 1992-173723	19920609
PRAI	JP 1992-173723		19920609		

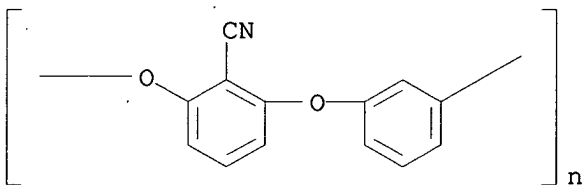
AB The title polymers with good heat and solvent resistance are prepared by treating dinitrobenzonitrile or chloronitrobenzonitrile with divalent phenols in the presence of metal compds. and RNH<sub>2</sub> (R = H, C1-12 alkyl, aryl) or their salts in amide solvents. Thus, 2-chloro-6-nitrobenzonitrile 0.04, resorcinol 0.04, K<sub>2</sub>CO<sub>3</sub> 0.15, and NH<sub>4</sub>Cl 0.12 mol were heated in 150 mL N-methylpyrrolidone at 190-195° for 2 h to obtain a polymer with reduced viscosity 0.49 dL/g (0.2 g/dL in p-ClC<sub>6</sub>H<sub>4</sub>OH at 60°), glass transition temperature 147°, and heat decomposition temperature 460° in 96% yield.

IC ICM C08G065-40

CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST prepn arom polyether nitrile heatproof; nitrobenzonitrile phenol copolymer  
 polyether; resorcinol chloro benzonitrile copolymer  
 IT Heat-resistant materials  
 (aromatic poly(ether nitriles), nitrobenzonitriles and divalent phenols  
 for)  
 IT Amines, uses  
 RL: USES (Uses)  
 (polymerization of nitrobenzonitriles and divalent phenols in presence of)  
 IT Polyethers, preparation  
 RL: PREP (Preparation)  
 (preparation of, metal compds. and amine (salts) and amide solvents for)  
 IT 584-08-7, Potassium carbonate 1310-73-2, Sodium hydroxide, uses  
 7783-20-2, Ammonium sulfate, uses 12125-02-9, Ammonium chloride, uses  
 RL: USES (Uses)  
 (polymerization of nitrobenzonitriles and divalent phenols in presence of)  
 IT 94196-53-9P 111867-27-7P 155315-14-3P  
 155411-73-7P  
 RL: PREP (Preparation)  
 (preparation of, metal compds. and amine (salts) and amide solvents for)  
 IT 94196-53-9P 111867-27-7P 155315-14-3P  
 155411-73-7P  
 RL: PREP (Preparation)  
 (preparation of, metal compds. and amine (salts) and amide solvents for)  
 IT 94196-53-9P 111867-27-7P 155411-73-7P  
 RL: PREP (Preparation)  
 (preparation of, metal compds. and amine (salts) and amide solvents for)  
 RN 94196-53-9 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA  
 INDEX NAME)



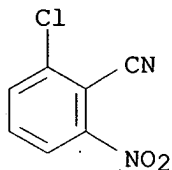
RN 111867-27-7 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



RN 155411-73-7 HCAPLUS  
 CN Benzonitrile, 2-chloro-6-nitro-, polymer with 1,3-benzenediol (9CI) (CA  
 INDEX NAME)

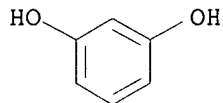
CM 1

CRN 6575-07-1  
CMF C7 H3 Cl N2 O2



CM 2

CRN 108-46-3  
CMF C6 H6 O2



L48 ANSWER 24 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1994:55189 HCAPLUS  
DN 120:55189  
TI Synthesis and properties of new crystalline poly(arylene ether nitriles)  
AU Matsuo, Shigeru; Murakami, Tomoyoshi; Takasawa, Ryuichi  
CS Cent. Res. Lab., Idemitsu Kosan, Chiba, 299-02, Japan  
SO Journal of Polymer Science, Part A: Polymer Chemistry (1993), 31(13), 3439-46  
CODEN: JPACEC; ISSN: 0887-624X  
DT Journal  
LA English  
AB Crystalline poly(arylene ether nitrile) is prepared by the polycondensation of 2,6-dihalobenzonitrile with resorcinol at 200° in N-methylpyrrolidone in the presence of Na2CO3. A reaction temperature of ≥200° is necessary to attain high mol. weight polymer. Spectral data indicated that the polymer has the structure of a poly(m-phenylene ether) with pendent nitrile groups on every other phenylene unit. Despite this structure, the crystallinity and the crystallization rate of the polymer were higher than those of the corresponding polymer with a p-phenylene structure. The polymers derived from 4,4'-biphenol, dihydroxytetraphenylmethane, dihydroxydiphenylsulfone, and 1,5-isoquinolinediol have high glass transition temps. The poly(arylene ether nitriles) exhibited excellent tensile strength compared with the corresponding ketone- or sulfone-containing polymers. Comparing the polymers containing the same bisphenol units, the order of glass transition temperature was sulfone > nitrile > ketone, while the order of tensile strength was nitrile > ketone > sulfone. The excellent mech. properties are attributable to the dipole-dipole interactions of the nitrile groups.  
CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36, 37

ST polyarylene ether nitrile prepn property; crystallinity polyarylene ether nitrile; glass temp polyarylene ether nitrile; halobenzonitrile bisphenol copolymer prepn property

IT Polymerization  
(of dihalobenzonitrile with arylenediols)

IT Crystallinity  
Crystallization kinetics  
Glass temperature and transition  
Mechanical property  
(of poly(arylene ether nitriles))

IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(aromatic, cardo, cyano-containing, preparation and properties of)

IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(aromatic, cyano-containing, preparation and properties of)

IT Polyketones  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, aromatic, cyano-containing, preparation and properties of)

IT Cardo polymers  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyethers, aromatic, cyano-containing, preparation and properties of)

IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, aromatic, cyano-containing, preparation and properties of)

IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polysulfone-, aromatic, cyano-containing, preparation and properties of)

IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polythioether-, aromatic, cyano-containing, preparation and properties of)

IT Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(thio-, polyether-, aromatic, cyano-containing, preparation and properties of)

of)

IT 70445-08-8P, Bisphenol A-2,6-dichlorobenzonitrile copolymer  
70445-20-4P, Bisphenol A-2,6-dichlorobenzonitrile copolymer sru  
76056-29-6P, 2,6-Dichlorobenzonitrile-4,4'-thiodiphenol copolymer  
sru 88285-90-9P, 2,6-Dichlorobenzonitrile-4,4'-thiodiphenol copolymer  
88291-14-9P 94196-53-9P 94196-54-0P,  
2,6-Dichlorobenzonitrile-hydroquinone copolymer sru 94196-69-7P  
94196-70-0P, 2,6-Dichlorobenzonitrile-hydroquinone copolymer  
105063-25-0P 105133-67-3P 105288-11-7P 108057-40-5P  
108057-82-5P 111867-27-7P, 2,6-Difluorobenzonitrile-  
resorcinol copolymer sru 111867-29-9P 111867-30-2P  
111994-99-1P 113506-36-8P, 2,6-Difluorobenzonitrile-  
resorcinol copolymer 125545-41-7P 126419-93-0P 152271-41-5P  
152271-42-6P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(preparation and properties of)

IT 70445-20-4P, Bisphenol A-2,6-dichlorobenzonitrile copolymer sru  
76056-29-6P, 2,6-Dichlorobenzonitrile-4,4'-thiodiphenol copolymer  
sru 88291-14-9P 94196-53-9P 94196-54-0P,  
2,6-Dichlorobenzonitrile-hydroquinone copolymer sru 94196-70-0P,  
2,6-Dichlorobenzonitrile-hydroquinone copolymer 108057-82-5P  
111867-27-7P, 2,6-Difluorobenzonitrile-resorcinol copolymer sru  
111867-29-9P 111867-30-2P 111994-99-1P

**113506-36-8P**, 2,6-Difluorobenzonitrile-resorcinol copolymer

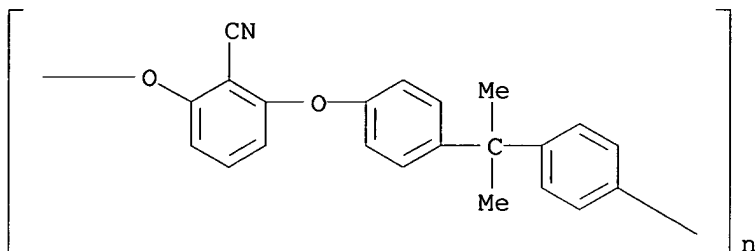
RL: PRP (Properties); **SPN (Synthetic preparation)**; **PREP**

**(Preparation)**

(preparation and properties of)

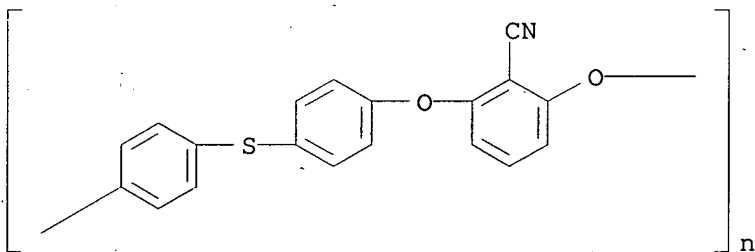
RN 70445-20-4 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



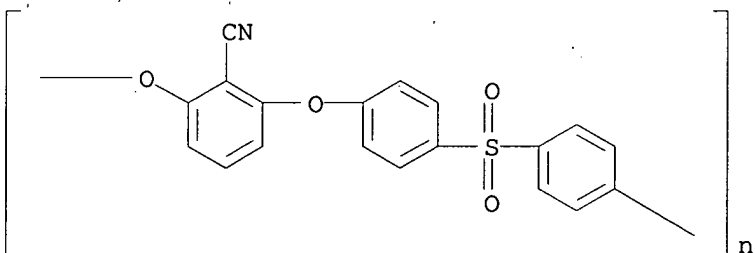
RN 76056-29-6 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylenethio-1,4-phenylene] (9CI) (CA INDEX NAME)



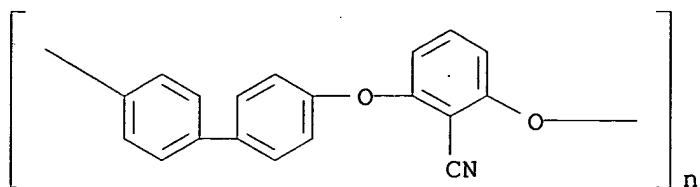
RN 88291-14-9 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylenesulfonyl-1,4-phenylene] (9CI) (CA INDEX NAME)



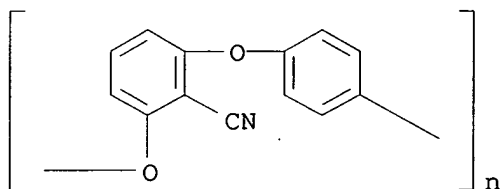
RN 94196-53-9 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 94196-54-0 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



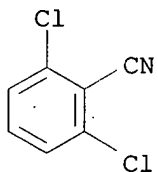
RN 94196-70-0 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 1194-65-6

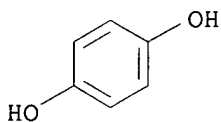
CMF C7 H3 Cl2 N



CM 2

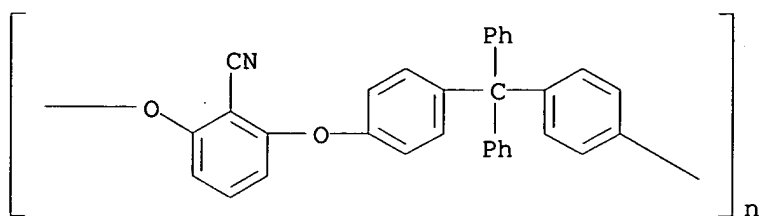
CRN 123-31-9

CMF C6 H6 O2



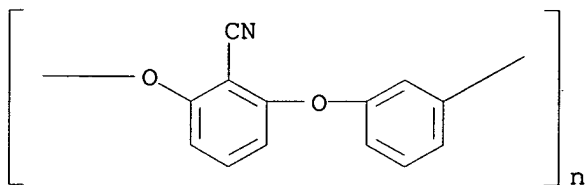
RN 108057-82-5 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene(diphenylmethylene)-1,4-phenylene] (9CI) (CA INDEX NAME)



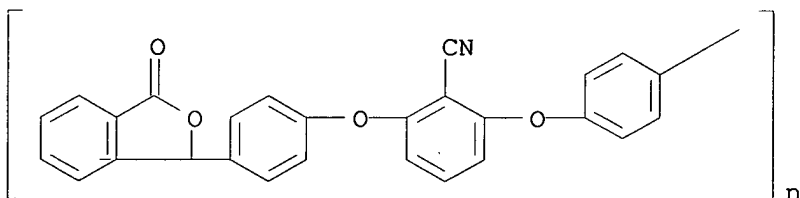
RN 111867-27-7 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



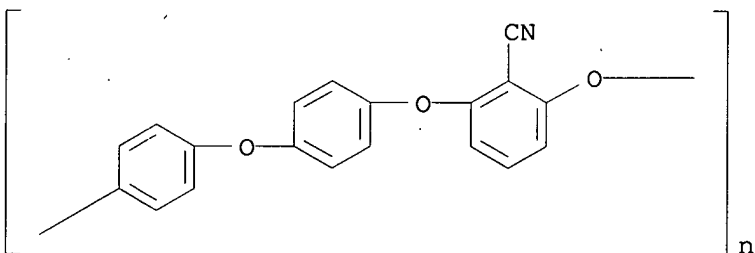
RN 111867-29-9 HCAPLUS

CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



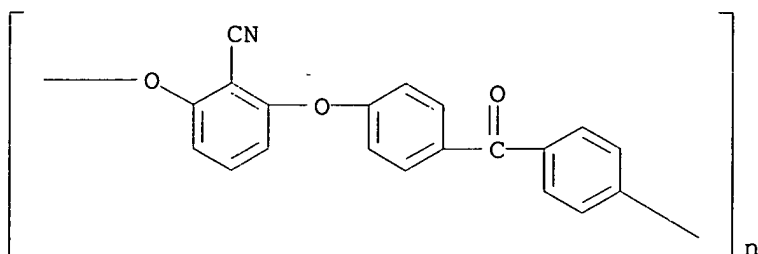
RN 111867-30-2 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)

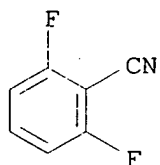


RN 111994-99-1 HCAPLUS

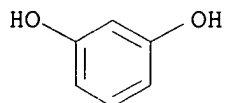
CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylenecarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 113506-36-8 HCAPLUS  
 CN Benzonitrile, 2,6-difluoro-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 1897-52-5  
 CMF C7 H3 F2 N



CM 2  
 CRN 108-46-3  
 CMF C6 H6 O2

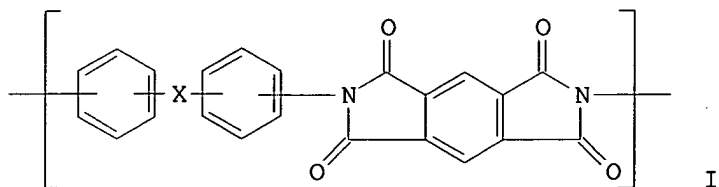


L48 ANSWER 25 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:613806 HCAPLUS  
 DN 117:213806  
 TI Heat-resistant thermoplastic polymer compositions with low melt viscosity  
 IN Takeya, Tetsuro  
 PA Idemitsu Kosan K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

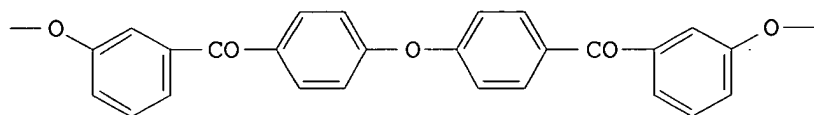
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04100855	A2	19920402	JP 1990-216992	19900820
PRAI	JP 1990-216992		19900820		



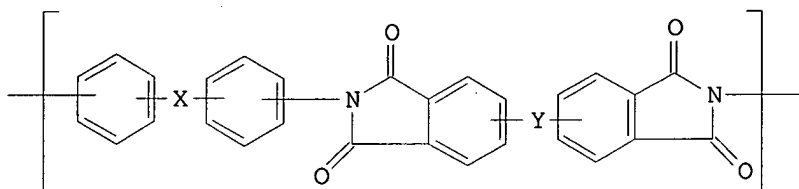
GI



I



II



III

AB Title comps. contain (a) 10-90% crystalline poly(cyanoaryl ethers) having a repeating unit  $C_6H_3(CN)OArO$  ( $Ar$  = phenylene, biphenylene, naphthylene) and (b) 10-90% thermoplastic polyimides having a pyromellitimide repeating unit I [ $X$  =  $CH_2$ ,  $CO$ ,  $p\text{-Me}_2CC_6H_4CMe_2$ ,  $p\text{-OC}_6H_4\text{-}p\text{-CMe}_2C_6H_4O$ ,  $p\text{-OC}_6H_4\text{-}p\text{-C}(\text{CF}_3)_2C_6H_4O$ ,  $C_6H_4OC_6H_4SO_2C_6H_4OC_6H_4O$  (all  $p$ -), phenylene ketone ether group II] or phthalimide repeating unit III [ $Y$  =  $Y_1$ ,  $Y_2C_6H_4Y_3$ ;  $Y_1\text{-}3$  = direct bond,  $O$ ,  $CO$ ,  $SO_2$ ,  $CMe_2$ ,  $C(\text{CF}_3)_2$ ]. Thus, 20 parts a crystalline 5.211:3.30 2,6-dichlorobenzonitrile-resorcinol copolymer was mixed with 80 parts a thermoplastic 6.17:2.14 bis[4-[4-(4-aminophenoxy)phenoxy]phenyl] sulfone-pyromellitic dianhydride copolymer and melt kneaded at  $350^\circ$  for 3 min to prepare a thermoplastic polymer composition showing flow length 7

cm

on injection molding at  $350^\circ$  and 9 MPa using a 1-mm spiral mold, whose test piece showed heat distortion temperature  $253^\circ$  (ASTM D-648).

IC ICM C08L071-00

ICS C08L079-08

CC 37-6 (Plastics Manufacture and Processing)

ST heat resistance polycyanoaryl ether blend; polyimide blend polyether heat resistance; polycyanoaryl ether blend polyimide viscosity

IT Heat-resistant materials

(blends of crystalline poly(cyanoaryl ethers) and thermoplastic polyimides, melt viscosity-reduced)

IT Polyimides, uses

RL: USES (Uses)

(thermoplastic, crystalline poly(cyanoaryl ether) blends, with heat resistance and reduced melt viscosity)

IT Polyethers, uses

RL: USES (Uses)

(aromatic, cyano-containing, crystalline, thermoplastic polyimide blends, with heat

resistance and reduced melt viscosity)

IT Plastics

RL: USES (Uses)

(thermo-, blends of crystalline poly(cyanoaryl ethers) and polyimides, with heat resistance and low melt viscosity)

IT 111867-27-7P, 2,6-Dichlorobenzonitrile-resorcinol copolymer, sru

113506-35-7P, 2,6-Dichlorobenzonitrile-resorcinol copolymer

134437-91-5P

RL: PREP (Preparation)

(crystalline, preparation of, thermoplastic polyimide blends, with heat resistance and reduced melt viscosity)

IT 121465-63-2P, Bis[4-[4-(4-aminophenoxy)phenoxy]phenyl]

sulfone-pyromellitic dianhydride copolymer 121476-33-3P,

Bis[4-[4-(4-aminophenoxy)phenoxy]phenyl] sulfone-pyromellitic dianhydride copolymer, sru

RL: PREP (Preparation)

(thermoplastic, preparation of, crystalline poly(cyanoaryl ether) blends,

with

heat resistance and reduced melt viscosity)

IT 111867-27-7P, 2,6-Dichlorobenzonitrile-resorcinol copolymer, sru

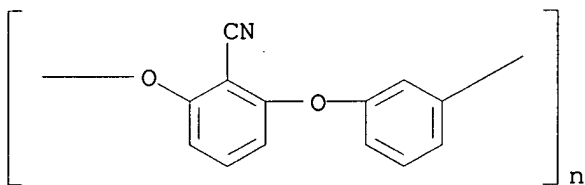
113506-35-7P, 2,6-Dichlorobenzonitrile-resorcinol copolymer

RL: PREP (Preparation)

(crystalline, preparation of, thermoplastic polyimide blends, with heat resistance and reduced melt viscosity)

RN 111867-27-7 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



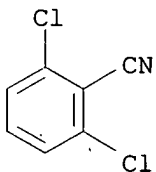
RN 113506-35-7 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 1194-65-6

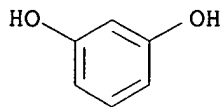
CMF C7 H3 Cl2 N



CM 2

CRN 108-46-3

CMF C6 H6 O2



IT **121465-63-2P**, Bis[4-[4-(4-aminophenoxy)phenoxy]phenyl] sulfone-pyromellitic dianhydride copolymer **121476-33-3P**, Bis[4-[4-(4-aminophenoxy)phenoxy]phenyl] sulfone-pyromellitic dianhydride copolymer, sru  
 RL: **PREP (Preparation)**

(thermoplastic, preparation of, crystalline poly(cyanoaryl ether) blends, with heat resistance and reduced melt viscosity)

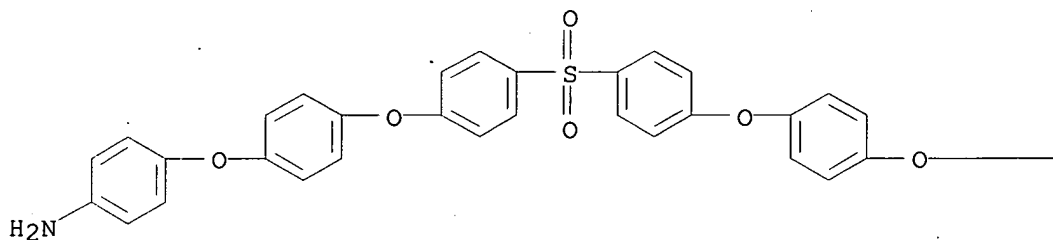
RN 121465-63-2 HCAPLUS  
 CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with 4,4'-[sulfonylbis(4,1-phenyleneoxy-4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

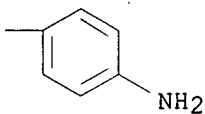
CRN 120617-82-5

CMF C36 H28 N2 O6 S

PAGE 1-A



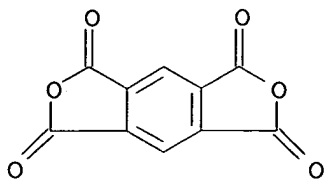
PAGE 1-B



CM 2

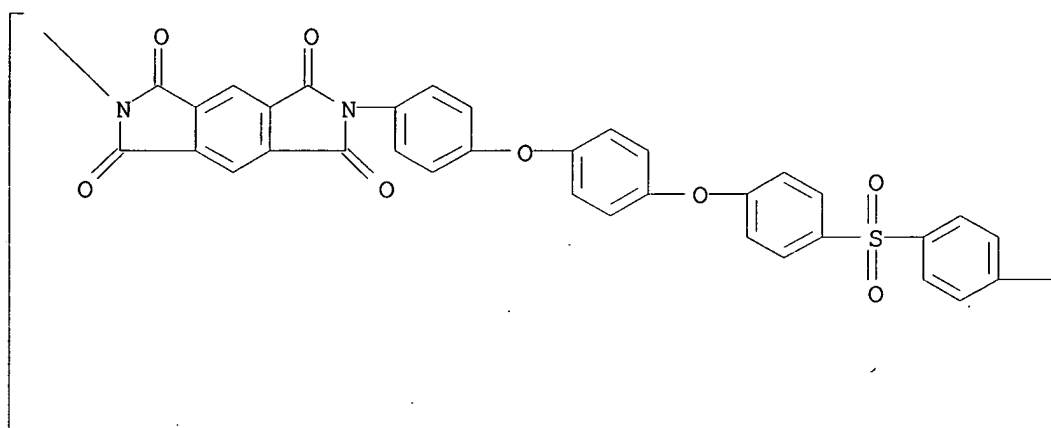
CRN 89-32-7

CMF C10 H2 O6

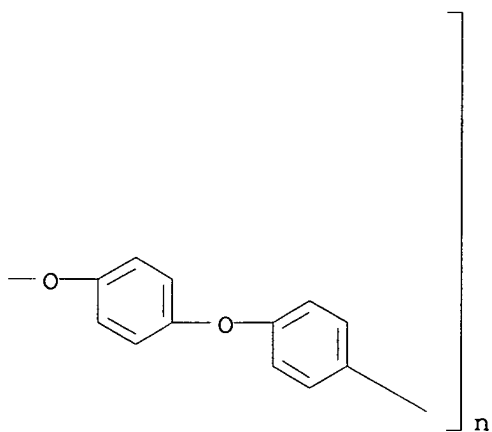


RN 121476-33-3 HCAPLUS  
 CN Poly[(5,7-dihydro-1,3,5,7-tetraoxobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl)-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L48 ANSWER 26 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:512725 HCAPLUS  
 DN 117:112725

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

TI Bibenzoxazole unit-containing polyethers  
 IN Matsuo, Shigeru; Kayano, Chikafumi  
 PA Idemitsu Kosan K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04089825	A2	19920324	JP 1990-206067	19900803
PRAI	JP 1990-206067		19900803		

AB Polyethers are prepared from 2,2'-bis(4-halophenyl)bibenzoxazoles, hydroquinone or 4,4'-biphenol, and in optionally comonomers such as 2,6-dichlorobenzonitrile and 4,4'-dichlorodiphenyl sulfone. Thus, 2,2'-bis(4-fluorophenyl)-5,5'-bibenzoxazole-4,4'-biphenol copolymer was prepared, with thermal decomposition beginning temperature 577° in air.

IC ICM C08G065-40

CC 37-3 (Plastics Manufacture and Processing)

ST fluorophenyl bibenzoxazole biphenyl copolymer heat resistant; polymn bisfluorophenylbibenzoxazole biphenol

IT Heat-resistant materials

(aromatic polyethers containing bibenzoxazole units)

IT Polymerization

(of bis(fluorophenyl)bibenzoxazole with biphenol and hydroquinone)

IT Polyethers, preparation

RL: PREP (Preparation)

(aromatic, bibenzoxazole unit-containing, heat-resistant)

IT 143118-87-0P 143118-88-1P 143132-42-7P 143132-43-8P

143132-44-9P 143132-45-0P 143132-46-1P 143150-10-1P

RL: PEP (Physical, engineering or chemical process); **PREP**

(**Preparation**); PROC (Process)

(manufacture of heat-resistant)

IT 143118-87-0P 143132-46-1P

RL: PEP (Physical, engineering or chemical process); **PREP**

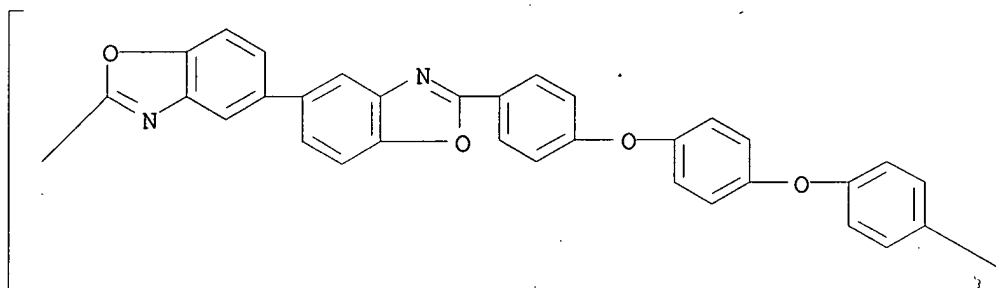
(**Preparation**); PROC (Process)

(manufacture of heat-resistant)

RN 143118-87-0 HCAPLUS

CN Poly([5,5'-bibenzoxazole]-2,2'-diyl-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylene) (9CI) (CA INDEX NAME)

PAGE 1-A



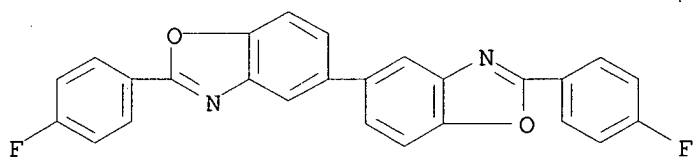
PAGE 1-B

] n

RN 143132-46-1 HCAPLUS  
CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol and  
2,2'-bis(4-fluorophenyl)-5,5'-bibenzoxazole (9CI) (CA INDEX NAME)

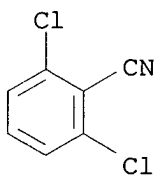
CM 1

CRN 127472-29-1  
CMF C26 H14 F2 N2 O2



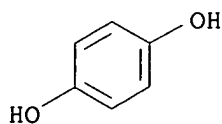
CM 2

CRN 1194-65-6  
CMF C7 H3 Cl2 N



CM 3

CRN 123-31-9  
CMF C6 H6 O2



L48 ANSWER 27 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:107051 HCAPLUS

DN 116:107051

TI Fluorinated poly(arylene ethers)

IN Mercer, Frank W.; Sovish, Richard C.

PA Raychem Corp., USA

SO PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9116369	A1	19911031	WO 1990-US7203	19901207
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5115082	A	19920519	US 1990-583899	19900917
	CA 2080832	AA	19911018	CA 1990-2080832	19901207
	CA 2080832	C	20020402		
	EP 524930	A1	19930203	EP 1991-902053	19901207
	EP 524930	B1	19970312		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
	JP 05506042	T2	19930902	JP 1991-502727	19901207
	JP 3089032	B2	20000918		
	AT 150043	E	19970315	AT 1991-902053	19901207
	ES 2099155	T3	19970516	ES 1991-902053	19901207
	CA 2080831	AA	19911018	CA 1991-2080831	19910415
	CA 2080831	C	20011016		
	US 5204416	A	19930420	US 1992-864804	19920407
PRAI	US 1990-510353	A	19900417		
	US 1990-510386	A	19900417		
	US 1990-583899	A	19900917		
	WO 1990-US7203	W	19901207		

AB The title polymers, useful as dielec. materials in integrated circuit chips, contain F and are e.g., prepared by polymerizing compds. such as 4,4'-(hexafluoroisopropylidene)diphenol (I) and decafluorobiphenyl (II). Thus, heating I, II, AcNMe<sub>2</sub>, and K<sub>2</sub>CO<sub>3</sub> at 80°, filtering to remove K<sub>2</sub>CO<sub>3</sub> and KF, concentrating, cooling to room temperature, and pouring in H<sub>2</sub>O precipitated

polymer which, after workup and drying, was spin-cooled (in 2-ethoxyethyl ether) on a ceramic substrate to give a tough, flexible film with dielec. constant (0% relative humidity) 2.504.

IC ICM C08G065-40

ICS C08L071-12

CC 35-5 (Chemistry of Synthetic High Polymers)

ST fluorinated polyarylene ether; fluorobisphenol fluorobiphenyl copolymer; dielec fluorinated polyarylene ether

IT Photography

(ceramic materials, coatings on, crosslinked fluorene-containing poly(arylene ethers) as)

IT Ceramic materials and wares

(coating of fluorine-containing poly(arylene ethers) on, in chip manufacture)

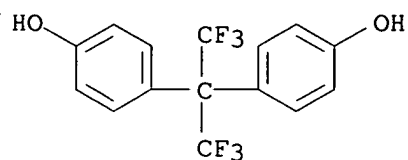
- IT Dielectric constant and dispersion  
(fluorene-containing poly(arylene ether), preparation and)
- IT Electric circuits  
(fluorene-containing poly(arylene ethers) for, preparation of dielec.)
- IT Water-resistant materials  
(fluorene-containing poly(arylene ethers), preparation of dielec.)
- IT Electric insulators and Dielectrics  
(fluorene-containing poly(arylene ethers), preparation of water-resistant)
- IT Fluoropolymers  
RL: PREP (Preparation)  
(fluorinated poly(arylene ether), dielec., preparation of, for chips)
- IT Polyoxyarylenes  
RL: PREP (Preparation)  
(fluorine-containing, dielec., preparation of, for chip manufacture)
- IT Crosslinking  
(thermal, of fluorine-containing poly(arylene ethers), as dielecs. in chip manufacture)
- IT 80-15-9 80-43-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(crosslinking by, of fluorene-containing poly(arylene ethers))
- IT 7440-47-3, Chromium, uses 7440-50-8, Copper, uses  
RL: USES (Uses)  
(in preparation of coated ceramic materials for photolithog.)
- IT 136835-79-5P 136875-49-5P  
RL: PREP (Preparation)  
(preparation of, as dielec. materials for chips)
- IT 107502-16-9P 136835-79-5P 136875-56-4P 136875-57-5P 136875-59-7P  
136875-60-0P 136875-61-1P 136875-62-2P 136875-63-3P  
**136875-64-4P** 136919-60-3P 136958-24-2P 136958-29-7P  
136958-37-7P 136958-47-9P 136958-52-6P 136990-30-2P 136990-31-3P  
136990-32-4P 139100-18-8P 139351-15-8P 139413-21-1P  
RL: PREP (Preparation)  
(preparation of, dielec., for chip manufacture)
- IT **136835-80-8P** 136835-81-9P 136835-82-0P **136835-83-1P**  
136875-50-8P 136875-51-9P **136875-52-0P 136875-52-0P**  
136875-53-1P 136875-54-2P 136875-55-3P  
RL: **PREP (Preparation)**  
(preparation of, dielec., for chips)
- IT **136875-64-4P**  
RL: PREP (Preparation)  
(preparation of, dielec., for chip manufacture)
- RN 136875-64-4 HCAPLUS
- CN 1,3-Benzenediol, 4,6-dichloro-, polymer with 2,2',3,3',4,4',5,5',6,6'-  
decafluoro-1,1'-biphenyl and 4,4'-[2,2,2-trifluoro-1-  
(trifluoromethyl)ethylidene]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 1478-61-1

CMF C15 H10 F6 O2

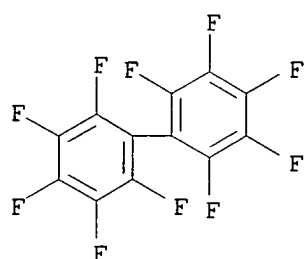




CM 2

CRN 434-90-2

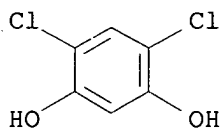
CMF C12 F10



CM 3

CRN 137-19-9

CMF C6 H4 C12 O2



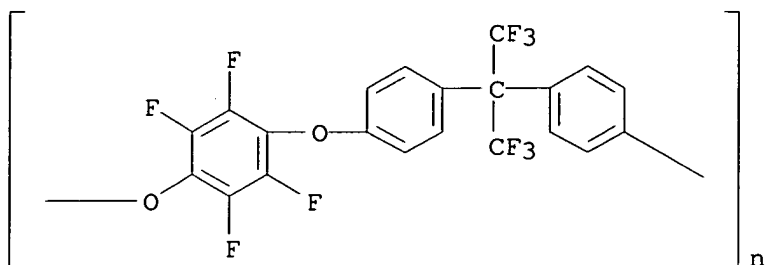
IT 136835-80-8P 136835-83-1P 136875-52-0P

RL: PREP (Preparation)

(preparation of, dielec., for chips)

RN 136835-80-8 HCAPLUS

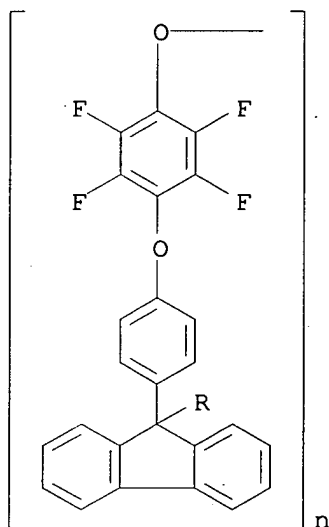
CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenylene] (9CI) (CA INDEX NAME)



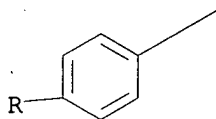
RN 136835-83-1 HCAPLUS

CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenylene-9H-fluorene-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



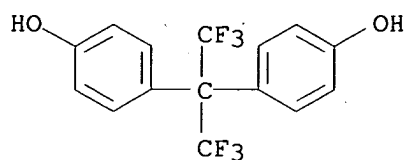
RN 136875-52-0 HCAPLUS

CN 1,3-Benzenediol, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 1478-61-1

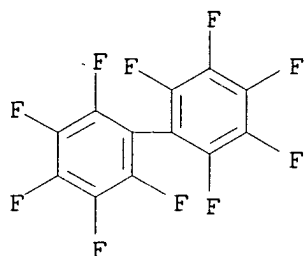
CMF C15 H10 F6 O2



CM 2

CRN 434-90-2

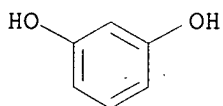
CMF C12 F10



CM 3

CRN 108-46-3

CMF C6 H6 O2

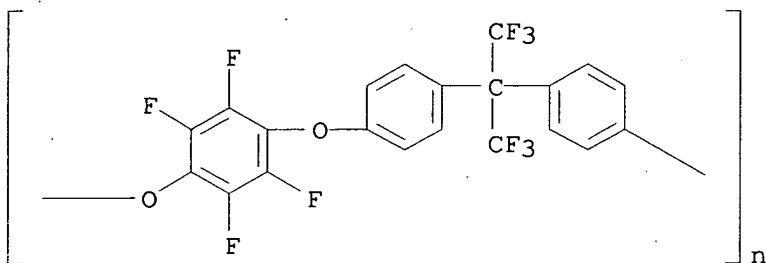


L48 ANSWER 28 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1991:609427 HCAPLUS  
 DN 115:209427  
 TI Crosslinkable fluorinated polymer compositions and crosslinking agents  
 IN Mercer, Frank W.; Goodman, Timothy D.; Lau, Aldrich N. K.; Vo, Lanchi P.  
 PA Raychem Corp., USA  
 SO PCT Int. Appl., 42 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9109081	A1	19910627	WO 1990-US7213	19901207
	W: CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				

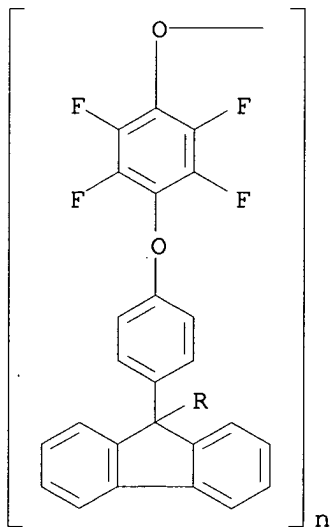
US 5155175	A	19921013	US 1990-583897	19900917
CA 2070809	AA	19910609	CA 1990-2070809	19901207
CA 2070809	C	20030520		
CA 2080832	AA	19911018	CA 1990-2080832	19901207
CA 2080832	C	20020402		
EP 504265	A1	19920923	EP 1991-901188	19901207
EP 504265	B1	19960214		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
JP 05502257	T2	19930422	JP 1991-501617	19901207
JP 3064011	B2	20000712		
AT 134208	E	19960215	AT 1991-901188	19901207
ES 2082963	T3	19960401	ES 1991-901188	19901207
CA 2080831	AA	19911018	CA 1991-2080831	19910415
CA 2080831	C	20011016		
PRAI US 1989-447750	A	19891208		
US 1990-510353	A	19900417		
US 1990-510386	A	19900417		
US 1990-583897	A	19900917		
WO 1990-US7213	W	19901207		
AB	The compns., with high gel content, low dielec. constant, and good solvent resistance and useful as potting compns. for integrated circuits, etc., comprise fluorinated poly(arylene ethers) OZ1Z(Z1)mO(Z2)n [Z = (fluorine-substituted) hydrocarbyl; Z1 = (halogen-substituted) phenylene; Z2 = fluorine-substituted aryl] and effective amount of bistriazene compds. R1R2NN:N-p-C6H4-R5-p-C6H4-N:NNR3R4 (I; R1-R4 = H, Me, Et, Ph; R5 = O, SO2, O-p-C6H4-p-C6H4-O, residue of hydroquinone, bisphenol A, bisphenol AF, or bisphenol S) as crosslinking agents. Thus, a solution containing 83.33% 9,9-bis(4-hydroxyphenyl)fluorene-decafluorobiphenyl copolymer and 16.67% I (R1-R4 = Me, R5 = O-p-C6H4-p-C6H4-p-C6H4-O) was spin coated on a substrate and cured to give a crosslinked layer having gel content $93.7 \pm 2.2\%$ , vs. $3.3 \pm 0.2\%$ for a layer without I.			
IC	ICM C08K005-27			
	ICS C08L071-12; C08G065-40			
CC	37-6 (Plastics Manufacture and Processing)			
	Section cross-reference(s): 76			
ST	polyoxyarylene fluorinated crosslinking agent bistriazene; gel content crosslinked fluorinated polyoxyarylene; dielec const crosslinked fluorinated polyoxyarylene; solvent resistance crosslinked fluorinated polyoxyarylene; potting compn crosslinked fluorinated polyoxyarylene			
IT	Crosslinking agents			
	(bistriazene compds., preparation of, for fluorinated polyoxyarylenes)			
IT	Potting compositions			
	(crosslinkable fluorinated polyoxyarylenes as, preparation of bistriazene compds. as crosslinkers for)			
IT	Polyoxyarylenes			
	RL: PREP (Preparation)			
	(fluorinated, preparation of, crosslinking agents for, bistriazene compds. as)			
IT	136528-36-4P	136528-37-5P	136528-38-6P	
	RL: MOA (Modifier or additive use); PREP (Preparation); USES (Uses)			
	(crosslinking agents, preparation of, for fluorinated polyoxyarylenes)			
IT	136835-79-5P	136835-80-8P	136835-81-9P	136835-82-0P
	136835-83-1P	136835-84-2P	136875-49-5P	136875-50-8P
	136875-51-9P	136875-52-0P	136875-53-1P	136875-54-2P
	136875-55-3P	136875-56-4P	136875-57-5P	136875-58-6P
	136875-59-7P			
	136875-60-0P	136875-61-1P	136875-62-2P	136875-63-3P
	136875-64-4P	136958-24-2P	136958-28-6P	136958-29-7P
	136958-37-7P	136958-41-3P	136958-47-9P	136958-52-6P
	RL: PREP (Preparation)			

(preparation of, crosslinking agents for, bistriazene compds. as)  
 IT 28226-14-4P 28287-10-7P 136528-25-1P 136528-30-8P 136528-31-9P  
 136528-32-0P 136528-33-1P 136528-34-2P 136528-35-3P  
 RL: PREP (Preparation)  
 (preparation of, crosslinking agents, for fluorinated polyoxyarylenes)  
 IT 136835-80-8P 136835-83-1P 136875-52-0P  
 136875-64-4P  
 RL: PREP (Preparation)  
 (preparation of, crosslinking agents for, bistriazene compds. as)  
 RN 136835-80-8 HCAPLUS  
 CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenylene] (9CI) (CA INDEX NAME)

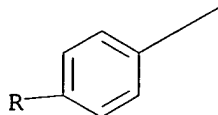


RN 136835-83-1 HCAPLUS  
 CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



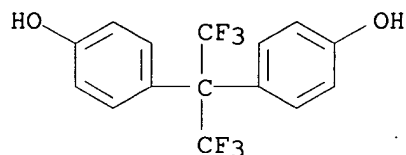
PAGE 2-A



RN 136875-52-0 HCAPLUS  
 CN 1,3-Benzenediol, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[pheno  
 1] (9CI) (CA INDEX NAME)

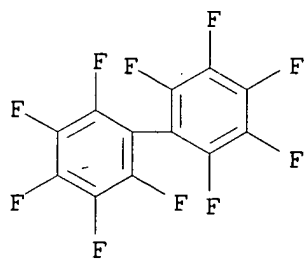
CM 1

CRN 1478-61-1  
 CMF C15 H10 F6 O2



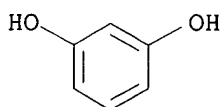
CM 2

CRN 434-90-2  
 CMF C12 F10



CM 3

CRN 108-46-3  
 CMF C6 H6 O2



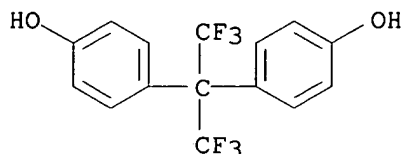
RN 136875-64-4 HCAPLUS

CN 1,3-Benzenediol, 4,6-dichloro-, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 1478-61-1

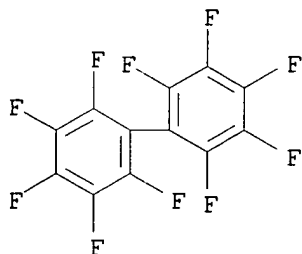
CMF C15 H10 F6 O2



CM 2

CRN 434-90-2

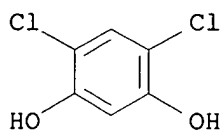
CMF C12 F10



CM 3

CRN 137-19-9

CMF C6 H4 Cl2 O2



L48 ANSWER 29 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:409672 HCAPLUS

DN 115:9672

TI Cyclic poly(aryl ether) oligomers, a process for preparation thereof, and polymerization of cyclic poly(aryl ether) oligomers

IN Mullins, Michael J.; Woo, Edmund P.

PA Dow Chemical Co., USA

SO Eur. Pat. Appl., 28 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 413257	A2	19910220	EP 1990-115283	19900809
	EP 413257	A3	19920603		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	US 5264538	A	19931123	US 1990-544718	19900627
	US 5264520	A	19931123	US 1990-547658	19900703
	BR 9004052	A	19910903	BR 1990-4052	19900810
	AU 9060908	A1	19910214	AU 1990-60908	19900813
	AU 632609	B2	19930107		
	CA 2023269	AA	19910215	CA 1990-2023269	19900813
	NO 9003543	A	19910215	NO 1990-3543	19900813
	JP 03088828	A2	19910415	JP 1990-211765	19900813
PRAI	US 1989-393503	A	19890814		
	US 1989-402177	A	19890901		

AB Cyclic polyoxyarylenes or polythioarylenes bearing electron-withdrawing groups are prepared by the ring-closure reaction of activated aryl halides or dinitro compds. with aromatic di(thi)ols; have low melt viscosity, and readily undergo ring-opening and chain-extension upon heating in the presence of catalysts, forming high-mol.-weight linear polymers with no coproduct formation. The cyclic oligomers are useful in thermoplastic parts and composites with good impact resistance as compared to those of thermosets. Thus, a mixture of 750 mL DMSO and 225 mL PhMe, after heating at reflux, was combined with 60 mL 1M DMSO solution of FC6H4SO2C6H4F and 60 mL 2M aqueous solution of KOH at a rate of 1 mL/h and 2 mL/h, resp. The mixture,

after heating at reflux for 48 h, gave a cyclic polyoxyarylene-polysulfone oligomer. The oligomer had inherent viscosity ( $\eta_{inh}$ ) 0.06 dL/g (0.5 g/dL in AcNMe<sub>2</sub> at 25°), when heated with CsF catalyst (24.1 mg per 158.3 mg oligomer) in Ph<sub>2</sub>SO<sub>2</sub> and ClPh from 260° to 300° over 215 min gave a polymer with  $\eta_{inh}$  0.50 dL/g (0.5 g/dL in Cl<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>Cl<sub>2</sub> at 25°).

IC ICM C08G065-40

ICS C08L071-10

CC 35-7 (Chemistry of Synthetic High Polymers)

ST polythioarylene polysulfone cyclic oligomer; polyoxyarylene polysulfone

cyclic oligomer; low viscosity cyclic polyoxyarylene oligomer

IT Carbon fibers, uses and miscellaneous

Glass fibers, uses and miscellaneous

RL: USES (Uses)

(composites with catalyst- and heat-curable cyclic polyoxyarylene oligomers)

IT Polythioarylenes

RL: PREP (Preparation)

(cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Polyoxyarylenes

RL: PREP (Preparation)

(polyimide-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Polyoxyphenylenes

RL: PREP (Preparation)

(polyketone-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)



IT Polyimides, preparation  
 Polysulfones, preparation  
 RL: PREP (Preparation)  
 (polyoxyarylene-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Ketones, preparation  
 RL: PREP (Preparation)  
 (polyoxyarylene-poly-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Polyketones  
 Polysulfones, preparation  
 RL: PREP (Preparation)  
 (polyoxyphenylene-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Polyoxyarylenes  
 Polyoxyphenylenes  
 Polythioarylenes  
 RL: PREP (Preparation)  
 (polysulfone-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Polysulfones, preparation  
 RL: PREP (Preparation)  
 (polythioarylene-, cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT Polymerization catalysts  
 (ring-opening, for cyclic polyoxyarylene or polythioarylene oligomers)

IT 7440-44-0  
 RL: USES (Uses)  
 (carbon fibers, composites with catalyst- and heat-curable cyclic polyoxyarylene oligomers)

IT 383-29-9 13400-13-0, Cesium fluoride 134505-01-4  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for ring-opening polymerization of cyclic polyoxyarylene oligomers)

IT 65228-97-9 81843-68-7, Bisphenol A-hexafluorobenzene copolymer  
 105062-60-0 109521-12-2 **113506-36-8** 114556-59-1  
 RL: USES (Uses)  
 (cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT 27380-27-4P **86019-07-0P** 133352-69-9P 134505-00-3P  
 134551-52-3P 134551-53-4P 134551-54-5P 134551-55-6P 134551-56-7P  
 134551-57-8P 134590-73-1P  
 RL: **PREP (Preparation)**  
 (preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

IT **113506-36-8**  
 RL: USES (Uses)  
 (cyclic oligomers, preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

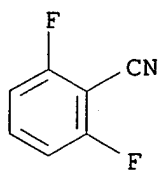
RN 113506-36-8 HCAPLUS

CN Benzonitrile, 2,6-difluoro-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

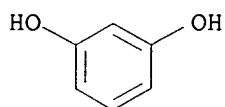
CRN 1897-52-5

CMF C7 H3 F2 N



CM 2

CRN 108-46-3  
CMF C6 H6 O2



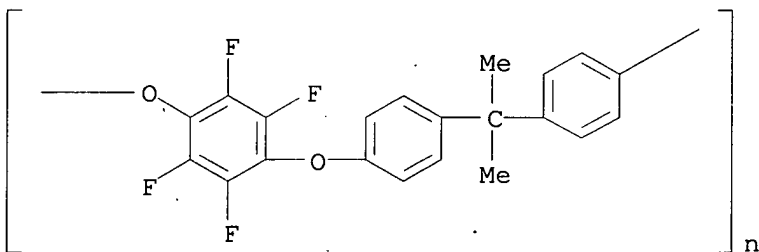
IT 86019-07-0P

RL: PREP (Preparation)

(preparation of catalyst- and heat-curable, for composites with good handling and impact resistance)

RN 86019-07-0 HCAPLUS

CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



L48 ANSWER 30 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:43792 HCAPLUS

DN 114:43792

TI Carbonyl group-substituted polyoxyphenylenes

IN Kricheldorf, Hans Rytger; Delius, Ulrich; Wehrmann, Rolf

PA Bayer A.-G., Germany

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

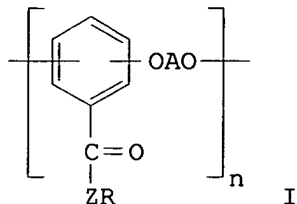
DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3838644	A1	19900517	DE 1988-3838644	19881115
	EP 369248	A2	19900523	EP 1989-120320	19891103
	EP 369248	A3	19901017		
	R: DE, FR, GB, IT				

JP 02182723	A2	19900717	JP 1989-290118	19891109
US 5004836	A	19910402	US 1989-435045	19891113
PRAI DE 1988-3838644		19881115		
GI				



AB The title copolymers having I [A = C1-4 alkylene, C6-14 arylene, C7-24 arylalkylene, alkaryl-substituted C6-30 arylene; R = (un)substituted Ph; Z = direct bond, O, S; n = 3-250] repeating units, are prepared and have excellent phys., high chemical resistance, and are useful in the manufacture of gas-separation membranes (no data). Thus, 10.91 g of 2,6-difluorobenzophenone, 12.72 g hydroquinone bistrimethylsilyl ether, and 100 mg CsF were heated for 2 h under N at 200-250°, heated for 0.5 h to 280°, a vacuum applied for 0.5 h, and the reaction mixture contacted 5 times with trifluoroacetic acid, dissolved in methylene chloride, precipitated, and dried

at 120° under vacuum, producing a copolymer in 74% yield having glass-transition temperature 132°.

IC ICM C08G065-38

ICS B01D071-52; C07D323-00

ICA B01D053-22; C07C049-813

ICI C08J005-18, C08L071-12

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

ST polyoxyphenylene ketone group substituted; carbonyl group substituted polyoxyphenylene manuf; membrane polyoxyphenylene resin; gas sepn membrane polyoxyphenylene resin; chem resistance carbonyl substituted polyoxyphenylene; phys property carbonyl substituted polyoxyphenylene

IT Chemically resistant materials

(carbonyl group-substituted polyoxyphenylenes, manufacture of)

IT Membranes

(gas-separation, manufacture of, carbonyl group-substituted polyoxyphenylenes for)

IT Polyoxyphenylenes

RL: IMF (Industrial manufacture); PREP (Preparation)

(carbonyl-containing, manufacture of, for membranes)

IT Polyphenyls

RL: IMF (Industrial manufacture); PREP (Preparation)

(polyoxyphenylene-, carbonyl-containing, manufacture of, for membranes)

IT Polyoxyphenylenes

RL: IMF (Industrial manufacture); PREP (Preparation)

(polyphenyl-, carbonyl-containing, manufacture of, for membranes)

IT **120228-89-9P** 120228-90-2P 120228-91-3P 120261-92-9P

120261-93-0P **120261-94-1P** **120261-95-2P**

**120261-97-4P** 120298-63-7P 120298-64-8P 122056-23-9P

122056-24-0DP, oxidation products 122056-24-0P **122056-60-4P**

**122056-61-5P** 124889-06-1P 130059-16-4P 130059-17-5P

130059-18-6P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of, chemical resistant, for gas-separation membranes)

IT 120228-89-9P 120261-94-1P 120261-95-2P  
120261-97-4P 122056-60-4P 122056-61-5P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of, chemical resistant, for gas-separation membranes)

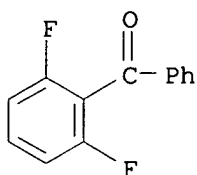
RN 120228-89-9 HCAPLUS

CN Methanone, (2,6-difluorophenyl)phenyl-, polymer with [1,4-phenylenebis(oxy)]bis[trimethylsilane] (9CI) (CA INDEX NAME)

CM 1

CRN 59189-51-4

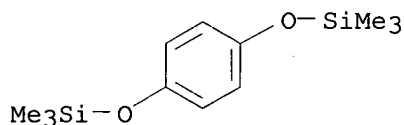
CMF C13 H8 F2 O



CM 2

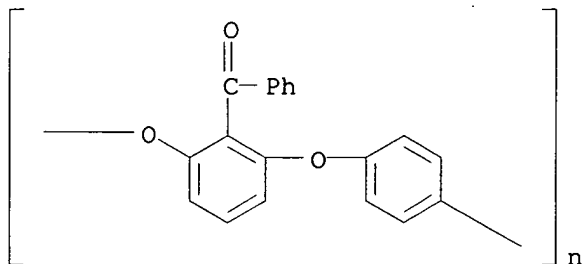
CRN 2117-24-0

CMF C12 H22 O2 Si2



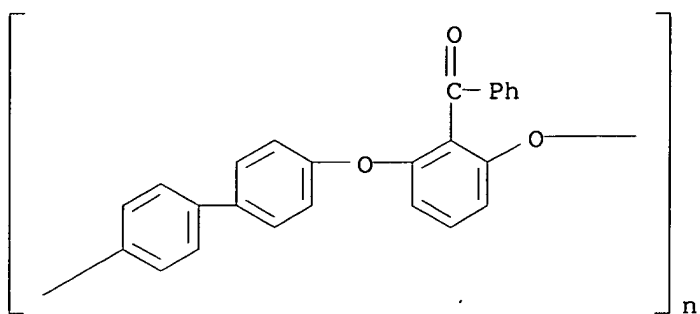
RN 120261-94-1 HCAPLUS

CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)

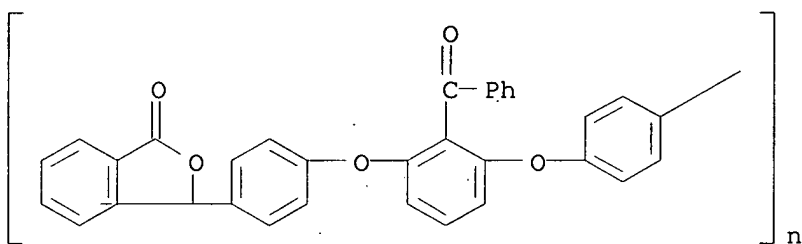


RN 120261-95-2 HCAPLUS

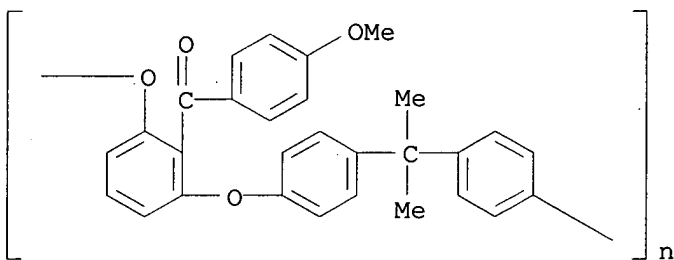
CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



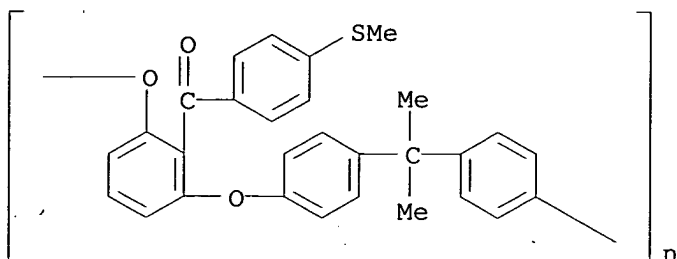
RN 120261-97-4 HCAPLUS  
 CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-benzoyl-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 122056-60-4 HCAPLUS  
 CN Poly[oxy[2-(4-methoxybenzoyl)-1,3-phenylene]oxy-1,4-phenylene(1-methylethyldiene)-1,4-phenylene] (9CI) (CA INDEX NAME)

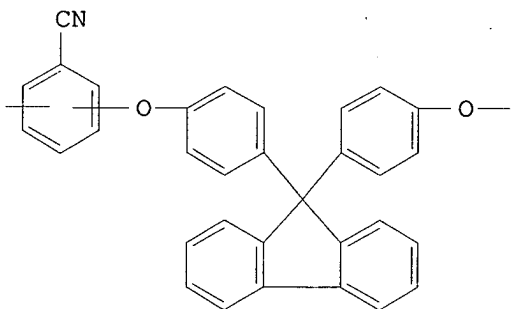


RN 122056-61-5 HCAPLUS  
 CN Poly[oxy[2-[4-(methylthio)benzoyl]-1,3-phenylene]oxy-1,4-phenylene(1-methylethyldiene)-1,4-phenylene] (9CI) (CA INDEX NAME)



L48 ANSWER 31 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1990:441559 HCAPLUS  
 DN 113:41559  
 TI Heat-resistant poly(cyanoaryl ethers) with good mechanic strength and their manufacture  
 IN Yamukai, Naoto; Matsuo, Shigeru; Kayano, Chikafumi; Ohama, Hideo  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02045526	A2	19900215	JP 1988-195846	19880805
PRAI	JP 1988-195846		19880805		
GI					

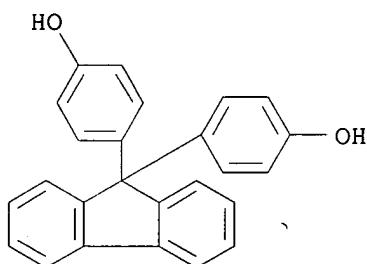


I

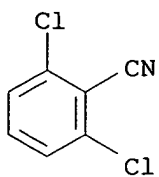
AB The title polymers containing repeating units I and having reduced viscosity ( $\eta$ , at 60° in 0.2 g/dL p-ClC<sub>6</sub>H<sub>4</sub>OH solution)  $\geq 0.2$  dL/g are prepared by treating NCC6H<sub>3</sub>XX1 (X, X1 = halo) with 9,9-bis(4-hydroxyphenyl)fluorene (II) in neutral polar solvent in presence of alkali metals. Thus, a solution of 2,6-dichlorobenzonitrile (III) 10.424, II 21.025, and Na<sub>2</sub>CO<sub>3</sub> 7.313 g in N-methylpyrrolidone was heated to 195° in 50 min, stirred for 1 h, and treated at 200° for 4 h to give 26.2 g polymer with  $\eta$  0.90 dL/g, glass transition point 283°, and 5% weight-reduction temperature 500°, vs. 0.82, 178, and 435, resp., for bisphenol A-III copolymer.

IC ICM C08G065-40  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST polycyanoaryl ether prepn heat resistance; cyanoaryl ether polymer heat

resistance; hydroxyphenylfluorene polymn dihalocyanobenzene;  
halobenzonitrile polymn bisphenylhydroxyfluorene; fluorene contg  
polycyanoaryl ether cardo  
IT Heat-resistant materials  
(fluorene-containing poly(cyanoaryl ethers), preparation of)  
IT Cardo polymers  
RL: PREP (Preparation)  
(poly(cyanoaryl ethers), fluorene group-containing, preparation of, with  
good heat resistance)  
IT Polyethers, preparation  
RL: PREP (Preparation)  
(aromatic, cyano-containing, preparation of, with good heat resistance)  
IT Polyoxyphenylenes  
RL: PREP (Preparation)  
(bis(hydroxyphenyl)fluorene-based, cyano-containing, cardo, preparation of,  
with good heat resistance)  
IT Cardo polymers  
RL: PREP (Preparation)  
(polyoxyphenylenes, bis(hydroxyphenyl)fluorene-based, cyano-containing,  
preparation of, with good heat resistance)  
IT 128116-47-2P 128116-48-3P 128116-49-4P 128147-50-2P  
RL: PREP (Preparation)  
(preparation of, heat-resistant)  
IT 128116-48-3P 128147-50-2P  
RL: PREP (Preparation)  
(preparation of, heat-resistant)  
RN 128116-48-3 HCAPLUS  
CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol and  
4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)  
CM 1  
CRN 3236-71-3  
CMF C25 H18 O2



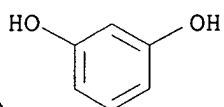
CM 2  
CRN 1194-65-6  
CMF C7 H3 Cl2 N



CM 3

CRN 108-46-3

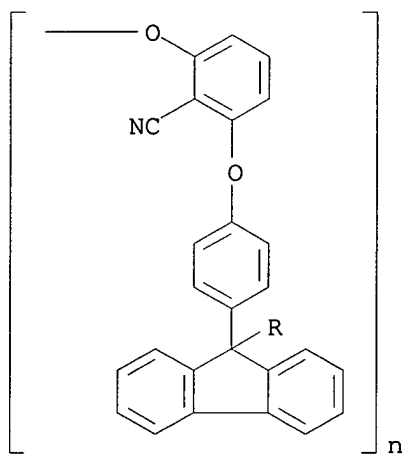
CMF C6 H6 O2



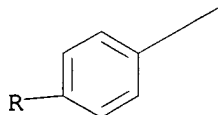
RN 128147-50-2 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



L48 ANSWER 32 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1990:99538 HCAPLUS

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

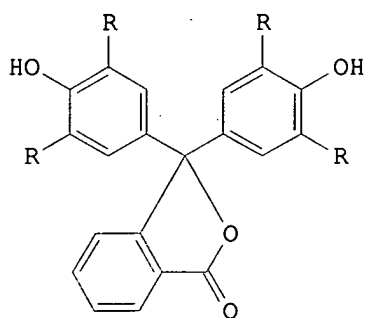


DN 112:99538  
 TI Preparation o heat-resistnt polycyanoaryl ethers  
 IN Yamukai, Naoto; Ohama, Hideo; Matsuo, Shigeru; Kayano, Chikafumi  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01225631	A2	19890908	JP 1988-51190	19880304
PRAI	JP 1988-51190		19880304		
GI					



I

AB Polymerization of diols I (R = H, Cl-4 alkyl, Ph) and optionally other aromatic diols or aromatic dihalides with 2,6-dichlorobenzonitrile (II) gave heat-resistant polyethers. Thus, heating 0.083 II, phenolphthalein 0.082, and K<sub>2</sub>CO<sub>3</sub> 0.094 mol in 100 mL N-methylpyrrolidone (III) to 195° over 50 min, adding PhMe, refluxing for 1 h, and heating at 200° for 5.5 h gave a polymer (96%) having reduced viscosity 1.54 dL/g (in p-chlorophenol, 2%) and 5% decomposition temperature 471°. Dissolving 5 g this polymer in 50 mL III, adding 3 mL 12 N HCl, and precipitating from MeOH

gave

purified polymer having decomposition temperature 505°.

IC ICM C08G065-40

ICS C08G065-46

CC 35-5 (Chemistry of Synthetic High Polymers)

ST polycyano aryl ether heat resistant; dichlorobenzonitrile phenolphthalein copolymer heat resistant

IT Heat-resistant materials  
 (polycyanoaryl ethers)

IT Polyethers, preparation  
 RL: PREP (Preparation)  
 (aromatic, cyano-containing, preparation of heat-resistant)

IT Nitriles, preparation  
 RL: PREP (Preparation)  
 (polyether-poly-, aryl, preparation of heat-resistant)

IT 111867-29-9P 125545-41-7P 125545-42-8P 125545-43-9P  
 125545-44-0P 125545-45-1P

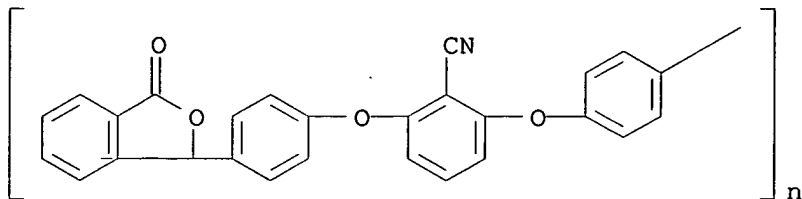
RL: PREP (Preparation)  
 (preparation of heat-resistant)

IT 111867-29-9P 125545-44-0P  
 RL: PREP (Preparation)

(preparation of heat-resistant)

RN 111867-29-9 HCAPLUS

CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



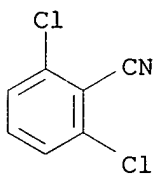
RN 125545-44-0 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol and 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA INDEX NAME)

CM 1

CRN 1194-65-6

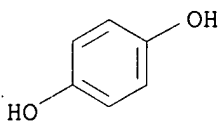
CMF C7 H3 Cl2 N



CM 2

CRN 123-31-9

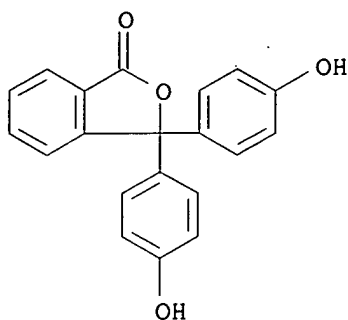
CMF C6 H6 O2



CM 3

CRN 77-09-8

CMF C20 H14 O4



L48 ANSWER 33 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1990:57031 HCAPLUS

DN 112:57031

TI Manufacture of heat-resistant aromatic polyethers

IN Matsuo, Shigeru

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01182321	A2	19890720	JP 1988-4444	19880112
PRAI	JP 1988-4444		19880112		

AB The title polymers contain -C<sub>6</sub>H<sub>3</sub>(Bz)OQO- [Q = (substituted) phenylene, naphthalenediyl, C<sub>6</sub>H<sub>5</sub>-k(R<sub>1</sub>)kYC<sub>6</sub>H<sub>5</sub>-j(R<sub>2</sub>)j; R<sub>1</sub>-2 = H, C<sub>1</sub>-12 alkyl, C<sub>5</sub>-10 cycloalkyl, C<sub>6</sub>-12 aryl, C<sub>1</sub>-10 alkoxy, C<sub>6</sub>-8 aryloxy, cyano; k, j = 0-4; Y = direct bond, O, S, SO<sub>2</sub>, CO, CR<sub>3</sub>R<sub>4</sub>, -(CR<sub>5</sub>R<sub>6</sub>)q; C<sub>4</sub>-11 cycloalkylidene; R<sub>3</sub>-5 = H, C<sub>1</sub>-7 alkyl, C<sub>5</sub>-10 cycloalkyl, C<sub>6</sub>-12 aryl; q = 2-10]. Thus, heating 2,6-difluorobenzophenone 0.081, and 4,4'-biphenol 0.08, and K<sub>2</sub>CO<sub>3</sub> 0.096 mol in 100 mL N-methylpyrrolidone and 50 mL PhMe at 200° for 2.5 h gave a polymer having 5% decomposition temperature 462°.

IC ICM C08G065-40

CC 35-5 (Chemistry of Synthetic High Polymers)

ST arom polyether heat resistance; difluorobenzophenone biphenol copolymer

IT Polyethers, preparation

RL: PREP (Preparation)

(aromatic, preparation of, containing benzoyl pendant groups, heat-resistant)

IT 120261-94-1P 120261-95-2P 124889-06-1P  
124889-07-2P

RL: PREP (Preparation)

(preparation of, heat-resistant)

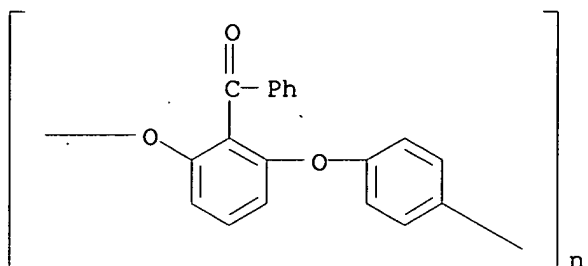
IT 120261-94-1P 120261-95-2P 124889-07-2P

RL: PREP (Preparation)

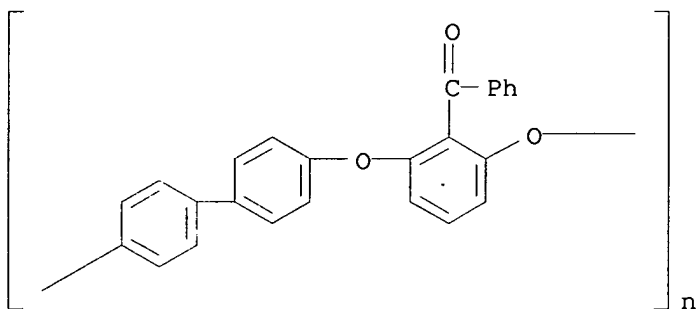
(preparation of, heat-resistant)

RN 120261-94-1 HCAPLUS

CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



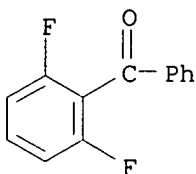
RN 120261-95-2 HCAPLUS  
 CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 124889-07-2 HCAPLUS  
 CN Methanone, (2,6-difluorophenyl)phenyl-, polymer with 1,4-benzenediol (9CI)  
 (CA INDEX NAME)

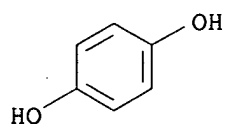
CM 1

CRN 59189-51-4  
 CMF C13 H8 F2 O



CM 2

CRN 123-31-9  
 CMF C6 H6 O2



- L48 ANSWER 34 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:478714 HCAPLUS  
 DN 111:78714  
 TI New polymer syntheses. 36. Functionalized aromatic polyethers derived from 4'-substituted 2,6-difluorobenzophenones  
 AU Kricheldorf, Hans R.; Delius, Ulrich  
 CS Inst. Tech. Makromol. Chem., Univ. Hamburg, Hamburg, D-2000, Fed. Rep. Ger.  
 SO Makromolekulare Chemie (1989), 190(6), 1277-88  
 CODEN: MACEAK; ISSN: 0025-116X  
 DT Journal  
 LA English  
 AB Toluene, anisole, thioanisole, 4-phenoxyacetophenone, and N,N-diacetyl-4-phenoxyaniline were subjected to a Friedel-Crafts acylation with 2,6-difluorobenzoyl chloride. The resulting 4'-substituted 2,6-difluorobenzophenones were condensed with trimethylsilylated bisphenol A (I) to yield polyethers with pendant functional groups. A series of polyethers was analogously prepared by cocondensation of 4'-substituted 2,6-difluorobenzophenones with a diphenol and 4,4'-difluorobenzophenone or bis(4-fluorophenyl) sulfone, and another series by cocondensation of I with mixts. of 4'-substituted 2,6-difluorobenzophenones and 2,6-difluorobenzonitrile or 2,6-difluoropyridine. All polyethers were characterized by inherent viscosities, elemental analyses and DSC measurements. The quant. polymer-analogous oxidation of methylthio groups into methylsulfinyl and finally into methylsulfonyl groups was demonstrated.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST difluorobenzophenone deriv polyether  
 IT Oxidation  
     (of methylthio groups on polyethers from substituted difluorobenzophenones)  
 IT Glass temperature and transition  
     (of polyethers from substituted difluorobenzophenones)  
 IT Polyethers, preparation  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (preparation of, from substituted difluorobenzophenones)  
 IT Polyketones  
     Polysulfones, preparation  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (polyether-, preparation of, from substituted difluorobenzophenones)  
 IT Polyethers, preparation  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (polyketone-, preparation of, from substituted difluorobenzophenones)  
 IT Polyethers, preparation  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
     (polysulfone-, preparation of, from substituted difluorobenzophenones)  
 IT 122056-24-ODP, oxidized 122056-61-5DP, oxidized  
     RL: PRP (Properties); **SPN (Synthetic preparation); PREP (Preparation)**  
     (preparation and NMR spectra of)  
 IT 122041-25-2P 122041-26-3P 122041-27-4P 122041-28-5P 122041-29-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and polymerization of)

IT 122056-22-8P 122056-23-9P 122056-24-0P 122056-25-1P 122056-26-2P  
 122056-27-3P 122056-28-4P 122056-29-5P 122056-30-8P  
 122056-31-9P 122056-32-0P 122056-33-1P 122056-34-2P  
 122056-35-3P 122056-36-4P 122056-37-5P 122056-38-6P 122056-39-7P  
 122056-40-0P 122056-59-1P 122056-60-4P  
 122056-61-5P 122056-62-6P 122056-63-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and properties of)

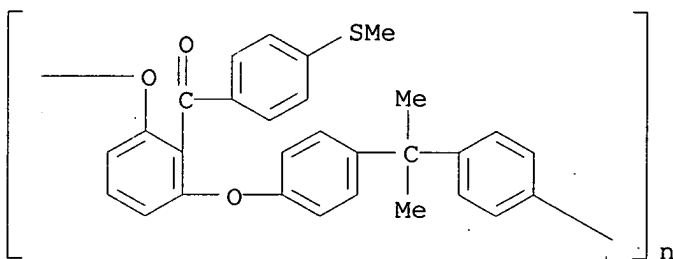
IT 122056-61-5DP, oxidized

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and NMR spectra of)

RN 122056-61-5 HCAPLUS

CN Poly[oxy[2-[4-(methylthio)benzoyl]-1,3-phenylene]oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



IT 122056-27-3P 122056-29-5P 122056-31-9P  
 122056-33-1P 122056-59-1P 122056-60-4P  
 122056-61-5P 122056-62-6P 122056-63-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and properties of)

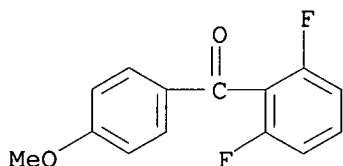
RN 122056-27-3 HCAPLUS

CN Methanone, bis(4-fluorophenyl)-, polymer with 1,4-benzenediol and (2,6-difluorophenyl)(4-methoxyphenyl)methanone (9CI) (CA INDEX NAME)

CM 1

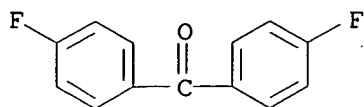
CRN 122041-26-3

CMF C14 H10 F2 O2



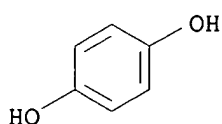
CM 2

CRN 345-92-6  
CMF C13 H8 F2 O



CM 3

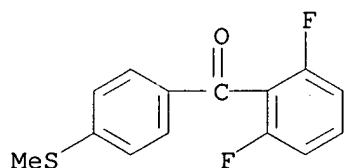
CRN 123-31-9  
CMF C6 H6 O2



RN 122056-29-5 HCAPLUS  
CN Methanone, bis(4-fluorophenyl)-, polymer with 1,4-benzenediol and  
(2,6-difluorophenyl)[4-(methylthio)phenyl]methanone (9CI) (CA INDEX NAME)

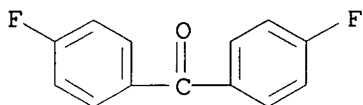
CM 1

CRN 122041-27-4  
CMF C14 H10 F2 O S



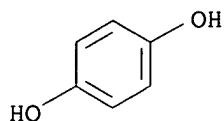
CM 2

CRN 345-92-6  
CMF C13 H8 F2 O



CM 3

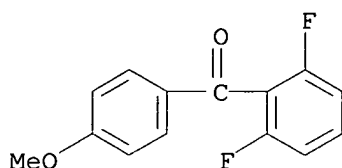
CRN 123-31-9  
CMF C6 H6 O2



RN 122056-31-9 HCAPLUS  
 CN Methanone, (2,6-difluorophenyl)(4-methoxyphenyl)-, polymer with  
 1,4-benzenediol and 1,1'-sulfonylbis[4-fluorobenzene] (9CI) (CA INDEX  
 NAME)

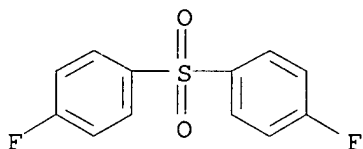
CM 1

CRN 122041-26-3  
 CMF C14 H10 F2 O2



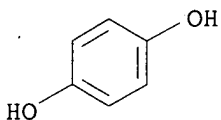
CM 2

CRN 383-29-9  
 CMF C12 H8 F2 O2 S



CM 3

CRN 123-31-9  
 CMF C6 H6 O2



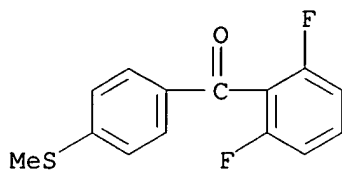
RN 122056-33-1 HCAPLUS  
 CN Methanone, (2,6-difluorophenyl)[4-(methylthio)phenyl]-, polymer with  
 1,4-benzenediol and 1,1'-sulfonylbis[4-fluorobenzene] (9CI) (CA INDEX  
 NAME)



CM 1

CRN 122041-27-4

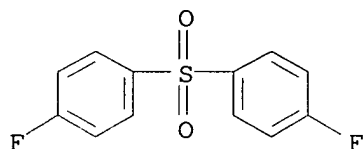
CMF C14 H10 F2 O S



CM 2

CRN 383-29-9

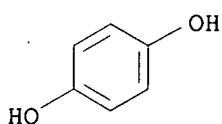
CMF C12 H8 F2 O2 S



CM 3

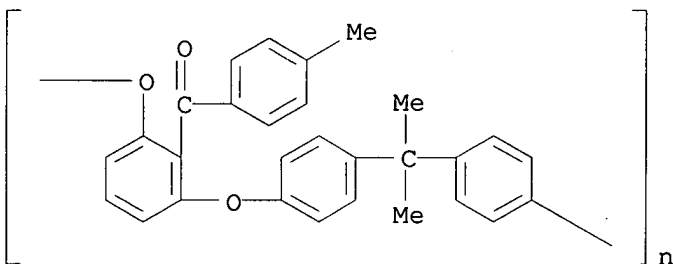
CRN 123-31-9

CMF C6 H6 O2



RN 122056-59-1 HCAPLUS

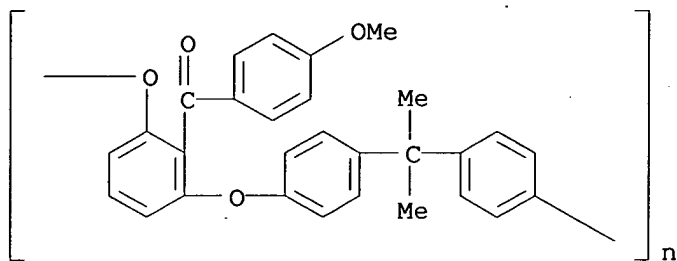
CM Poly[oxy[2-(4-methylbenzoyl)-1,3-phenylene]oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 122056-60-4 HCAPLUS

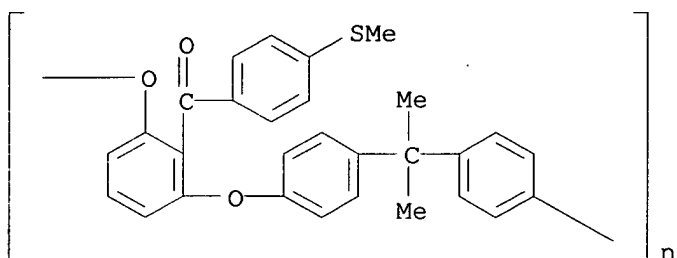
CM Poly[oxy[2-(4-methoxybenzoyl)-1,3-phenylene]oxy-1,4-phenylene(1-

methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



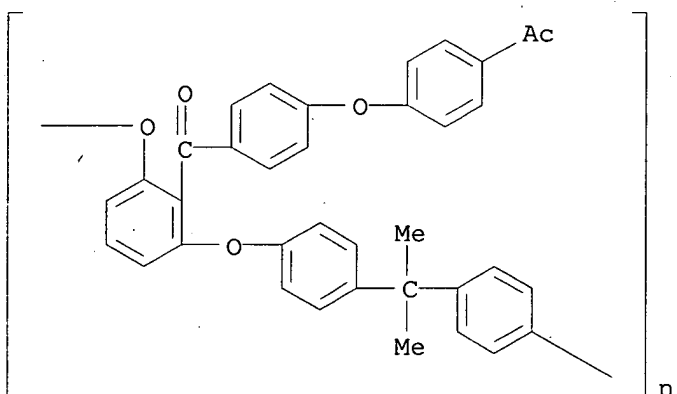
RN 122056-61-5 HCAPLUS

CN Poly[oxy[2-[4-(4-methylthio)benzoyl]-1,3-phenylene]oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



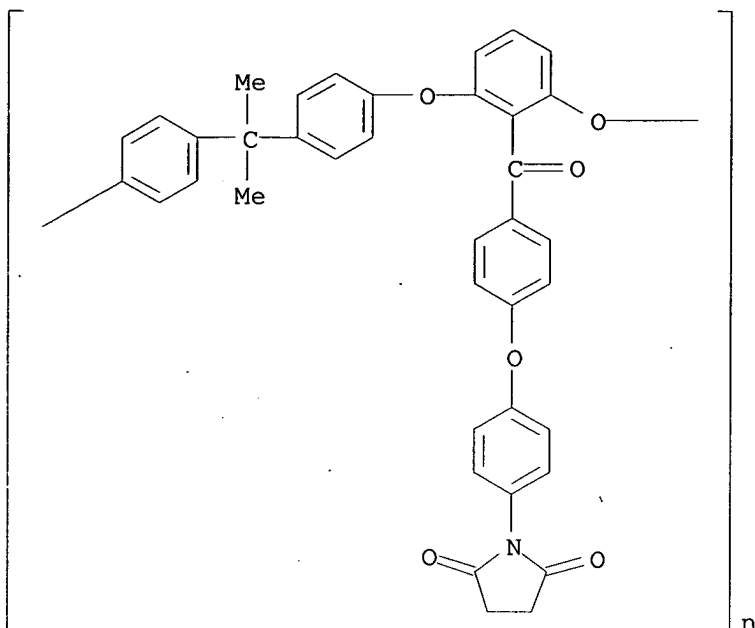
RN 122056-62-6 HCAPLUS

CN Poly[oxy[2-[4-(4-acetylphenoxy)benzoyl]-1,3-phenylene]oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 122056-63-7 HCAPLUS

CN Poly[oxy[2-[4-[4-(2,5-dioxo-1-pyrrolidinyl)phenoxy]benzoyl]-1,3-phenylene]oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



L48 ANSWER 35 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:173868 HCAPLUS  
 DN 110:173868  
 TI New polymer syntheses. 18. Synthesis of aromatic polyethers from  
 2,6-difluorobenzophenone and various silylated diphenols  
 AU Kricheldorf, Hans R.; Delius, Ulrich  
 CS Inst. Tech. Makromol. Chem., Univ. Hamburg, Hamburg, D-2000/13, Fed. Rep.  
 Ger.  
 SO Makromolekulare Chemie, Rapid Communications (1989), 10(1), 41-5  
 CODEN: MCRCD4; ISSN: 0173-2803  
 DT Journal  
 LA English  
 AB Polyethers were prepared from 2,6-difluorobenzophenone and silylated  
 hydroquinone, methylhydroquinone, phenylhydroquinone, 4,4'-  
 dihydroxybiphenyl, bisphenol A, or phenolphthalein. The polyethers had  
 number-average mol. wts.  $\geq 10,000$  and, in general, could not be crystallized  
 The glass temps. were 131-201°, which were slightly lower than the  
 corresponding polyether-polyketones.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST difluorobenzophenone silylated diphenol polyether; glass temp silylated  
 diphenol polyether  
 IT Glass temperature and transition  
 (of difluorobenzophenone-silylated diphenol polyethers)  
 IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, from difluorobenzophenone and silylated diphenols)  
 IT 120228-89-9P 120228-90-2P 120228-91-3P 120228-92-4P  
 120261-92-9P 120261-93-0P 120261-94-1P 120261-95-2P  
 120261-96-3P 120261-97-4P 120298-63-7P 120298-64-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and characterization of)  
 IT 120228-89-9P 120261-94-1P 120261-95-2P  
 120261-96-3P 120261-97-4P

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation and characterization of)

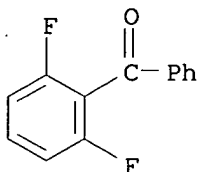
RN 120228-89-9 HCAPLUS

CN Methanone, (2,6-difluorophenyl)phenyl-, polymer with [1,4-phenylenebis(oxy)]bis[trimethylsilane] (9CI) (CA INDEX NAME)

CM 1

CRN 59189-51-4

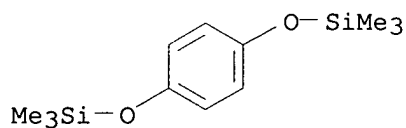
CMF C13 H8 F2 O



CM 2

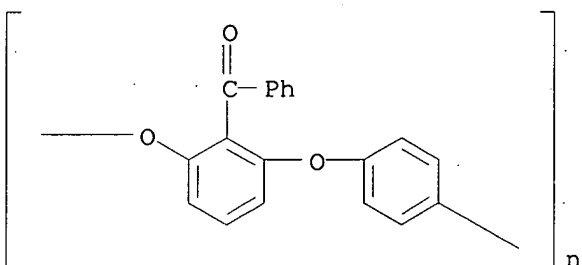
CRN 2117-24-0

CMF C12 H22 O2 Si2



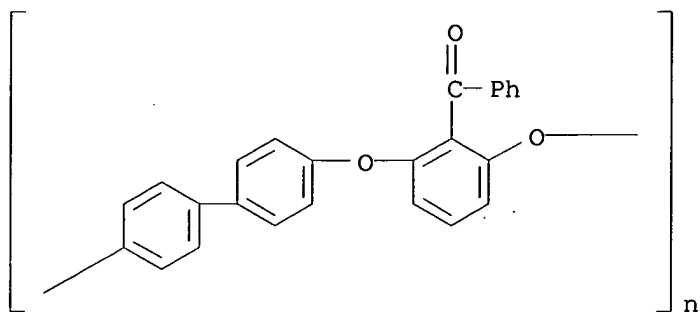
RN 120261-94-1 HCAPLUS

CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)

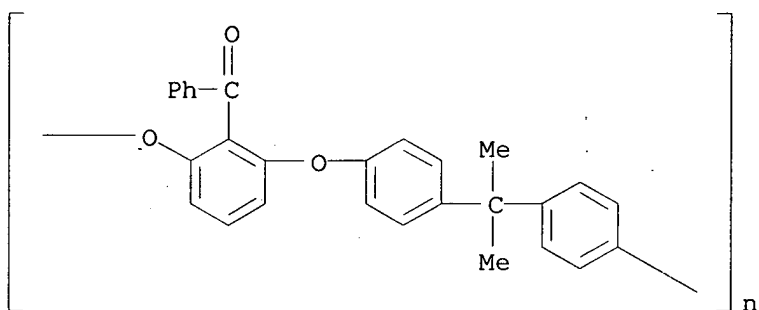


RN 120261-95-2 HCAPLUS

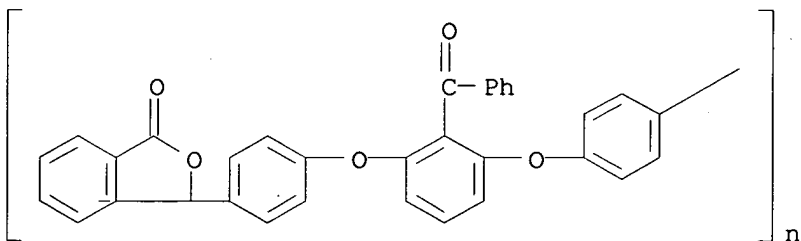
CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 120261-96-3 HCAPLUS  
 CN Poly[oxy(2-benzoyl-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 120261-97-4 HCAPLUS  
 CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-benzoyl-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



L48 ANSWER 36 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1988:113199 HCAPLUS  
 DN 108:113199  
 TI Manufacture of pure cyano-containing polyoxyarylenes  
 IN Matsuo, Shigeru; Murakami, Tomoyoshi; Yamazaki, Hiroataka  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62212430	A2	19870918	JP 1986-53983	19860312
	JP 03074689	B4	19911127		
PRAI	JP 1986-53983		19860312		

AB Title compds., showing no odor and no discoloration when molded at high temperature, are prepared by condensing dihalobenzonitriles with alkali metal salts of compds. containing 2 phenolic OH and washing with (a) mixts. containing neutral polar solvents and C1-4 alcs. (A) and/or C3-7 ketones (B), (b) A and/or B, and (c) organic acid solns. Thus, 2,6-dichlorobenzonitrile 20.641, 2,7-dihydroxynaphthalene 19.031, and K2CO3 17.414 g were mixed in 100 mL sulfolane (I) and 50 mL toluene under Ar 4.5 h at 175-200° to give the polyoxyarylene (II), which was mixed with 300 mL 60:40 volume% I-MeOH for 15 min at 40°, filtered, mixed with 500 mL MeOH for 15 min at 50°, filtered, and mixed with 500 mL 0.1% aqueous oxalic acid solution (III) for 15 min at 40° to give 98% II containing ≤100 ppm I. The purified II was injection molded at 370° giving no odor, compared with severe odor when II was purified with III, H2O, then MeOH.

IC ICM C08G065-46

CC 35-5 (Chemistry of Synthetic High Polymers)

ST polyoxycyanoarylene purifn methanol sulfolane ketone; oxalic acid purifn cyano contg polyoxyarylene; purifn polycyanoarylene ether manuf; dichlorobenzonitrile dihydroxynaphthalene polymer; odor free cyano contg polyoxyarylene; discoloration resistance cyano contg polyoxyarylene

IT Deodorization

Discoloration prevention  
(of cyano-containing polyoxyarylenes, by washing with solvents)

IT Polyoxyarylenes

RL: PUR (Purification or recovery); PREP (Preparation)  
(cyano-containing, purification of, solvents for)

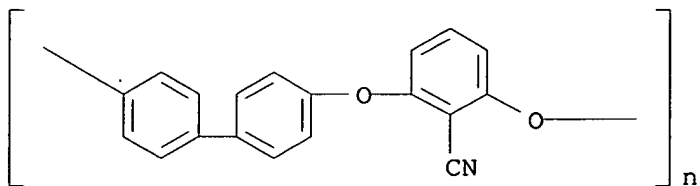
IT **94196-53-9P 94196-54-0P**, 2,6-Dichlorobenzonitrile-hydroquinone potassium salt copolymer, SRU 99807-39-3P  
**104677-83-0P**, 2,6-Dichlorobenzonitrile-hydroquinone potassium salt copolymer 104993-49-9P 105063-25-0P  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation and purification of, solvents for)

IT 67-56-1, uses and miscellaneous 67-64-1, uses and miscellaneous  
126-33-0 144-62-7, Oxalic acid, uses and miscellaneous  
RL: **USES (Uses)**  
(solvents, for purification of cyano-containing polyoxyarylenes)

IT **94196-53-9P 94196-54-0P**, 2,6-Dichlorobenzonitrile-hydroquinone potassium salt copolymer, SRU **104677-83-0P**, 2,6-Dichlorobenzonitrile-hydroquinone potassium salt copolymer  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation and purification of, solvents for)

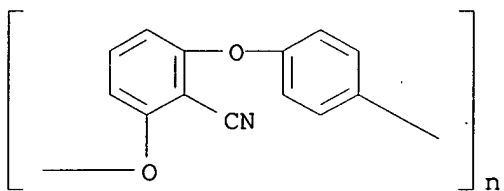
RN 94196-53-9 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 94196-54-0 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



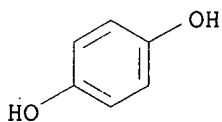
RN 104677-83-0 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol dipotassium salt (9CI) (CA INDEX NAME)

CM 1

CRN 4554-13-6

CMF C6 H6 O2 . 2 K

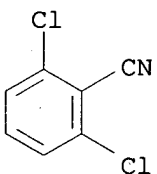


● 2 K

CM 2

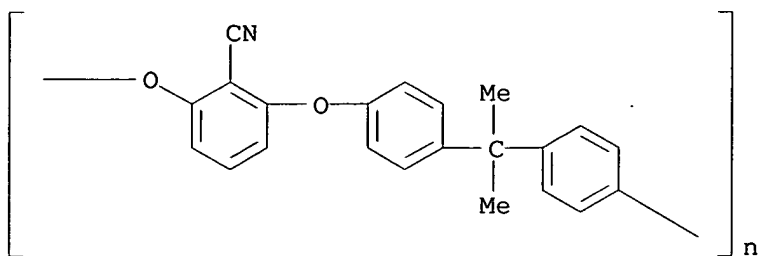
CRN 1194-65-6

CMF C7 H3 Cl2 N

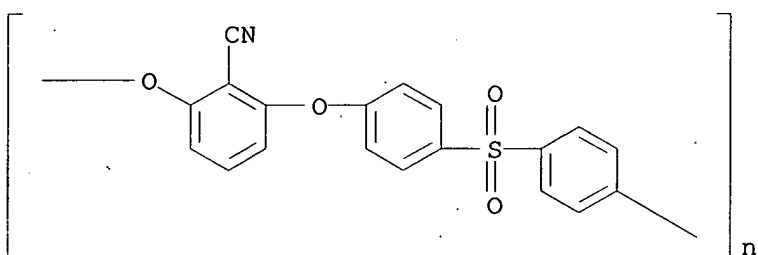


L48 ANSWER 37 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1988:6552 HCAPLUS  
 DN 108:6552  
 TI New polymer syntheses. 15. Syntheses of aromatic polyethers from difluorobenzonitriles and silylated diphenols  
 AU Kricheldorf, Hans R.; Meier, Jochen; Schwarz, Gert  
 CS Inst. Tech. Makromol. Chem., Univ. Hamburg, Hamburg, D-2000/13, Fed. Rep. Ger.  
 SO Makromolekulare Chemie, Rapid Communications (1987), 8(11), 529-34  
 CODEN: MCRCD4; ISSN: 0173-2803  
 DT Journal  
 LA English  
 AB Polyoxoxyphenylenes were prepared from 2,6- (I) or 2,4-difluorobenzonitriles and bis(trimethylsilyl)-terminated diphenols. The polymers from I and resorcinol, hydroquinone, or methylhydroquinone were crystalline and insol. in all common solvents, but the polymers from I and phenylhydroquinone, bisphenol A, bisphenol C, phenolphthalein, 4,4'-oxydiphenol, or 4,4'-sulfonyldiphenol were amorphous and had high glass temps. All polymers had 2-5% weight loss at 500°.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST polyoxoxyphenylene difluorobenzonitrile silylated diphenol  
 IT Crystallinity  
 Glass temperature and transition  
 (of bis(trimethylsilyl)-terminated diphenol-difluorobenzonitrile copolymers)  
 IT Polyoxoxyphenylenes  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, from difluorobenzonitriles and bis(trimethylsilyl)-terminated diphenols)  
 IT Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyoxoxyphenylene-, aromatic, preparation of, from difluorobenzonitriles and bis(trimethylsilyl)-terminated diphenols)  
 IT Polyoxoxyphenylenes  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polysulfone-, aromatic, preparation of, from difluorobenzonitriles and bis(trimethylsilyl)-terminated diphenols)  
 IT 70445-20-4P 76106-89-3P 88291-14-9P  
 94196-54-0P 111866-69-4P 111866-70-7P 111866-71-8P  
 111866-72-9P 111866-73-0P 111866-75-2P 111866-77-4P  
 111866-78-5P 111866-80-9P 111866-81-0P 111867-27-7P  
 111867-28-8P 111867-29-9P 111867-30-2P  
 111905-96-5P 111905-97-6P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and properties of)  
 IT 70445-20-4P 88291-14-9P 94196-54-0P  
 111866-71-8P 111866-72-9P 111866-73-0P  
 111867-27-7P 111867-28-8P 111867-29-9P  
 111867-30-2P 111905-96-5P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and properties of)  
 RN 70445-20-4 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)

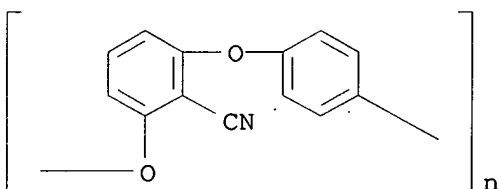




RN 88291-14-9 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylenesulfonyl-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



RN 94196-54-0 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)

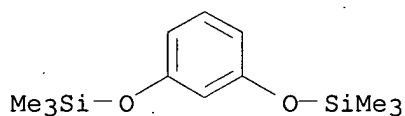


RN 111866-71-8 HCAPLUS  
 CN Benzonitrile, 2,6-difluoro-, polymer with [1,3-phenylenebis(oxy)]bis[trimethylsilane] (9CI) (CA INDEX NAME)

CM 1

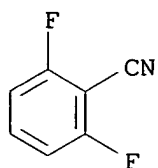
CRN 4520-29-0

CMF C12 H22 O2 Si2



CM 2

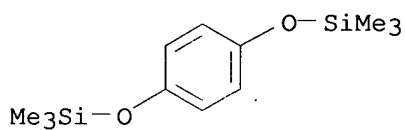
CRN 1897-52-5  
CMF C7 H3 F2 N



RN 111866-72-9 HCAPLUS  
CN Benzonitrile, 2,6-difluoro-, polymer with [1,4-phenylenebis(oxy)]bis[trimethylsilane] (9CI) (CA INDEX NAME)

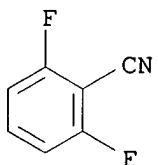
CM 1

CRN 2117-24-0  
CMF C12 H22 O2 Si2



CM 2

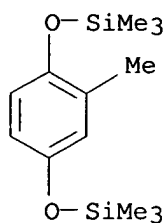
CRN 1897-52-5  
CMF C7 H3 F2 N



RN 111866-73-0 HCAPLUS  
CN Benzonitrile, 2,6-difluoro-, polymer with [(2-methyl-1,4-phenylene)bis(oxy)]bis[trimethylsilane] (9CI) (CA INDEX NAME)

CM 1

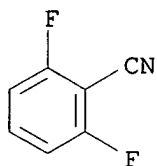
CRN 78018-53-8  
CMF C13 H24 O2 Si2



CM 2

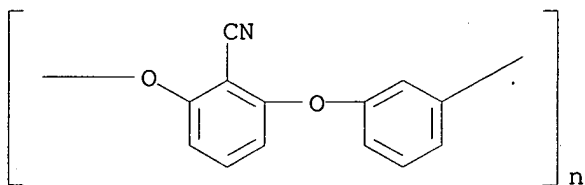
CRN 1897-52-5

CMF C7 H3 F2 N



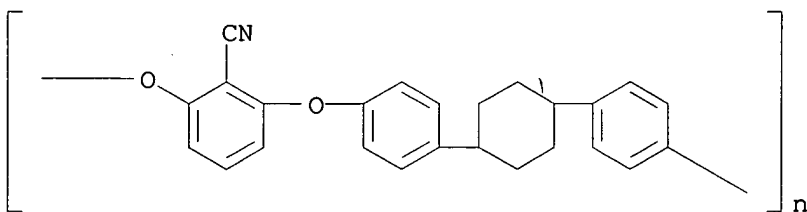
RN 111867-27-7 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



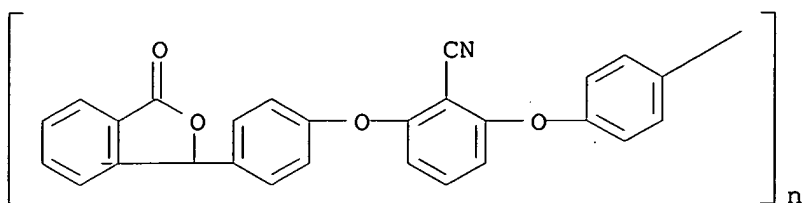
RN 111867-28-8 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene-1,4-cyclohexanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



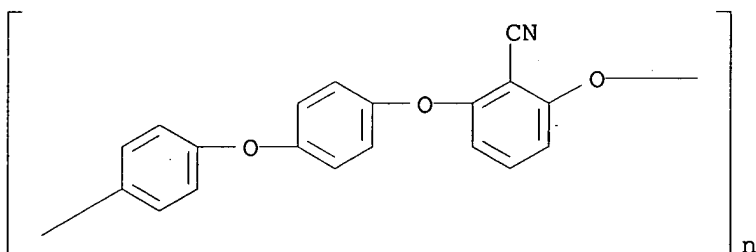
RN 111867-29-9 HCAPLUS

CN Poly[(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 111867-30-2 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenyleneoxy-1,4-phenylene] (9CI)  
(CA INDEX NAME)



RN 111905-96-5 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy(methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L48 ANSWER 38 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:51024 HCAPLUS

DN 106:51024

TI General preparation of tailored-length acetylene-terminated resins from low-cost bisphenols

AU Hedberg, Frederick L.; Unroe, Marilyn R.; Lindley, Patricia M.; Hunsaker, Marilyn E.

CS Air Force Wright Aeronaut. Lab., Wright-Patterson AFB, OH, USA

SO Report (1985), AFWAL-TR-85-4041; Order No. AD-A161902/2/GAR, 28 pp.

Avail.: NTIS

From: Gov. Rep. Announce. Index (U. S.) 1986, 86(6), Abstr. No. 611,782

DT Report

LA English

AB An Ullmann ether reaction of 1,3-dibromobenzene or 1,4-dibromobenzene with 3 low-cost bisphenols in 2,4,6-collidine with Cu<sub>2</sub>O or CuO gave Br-terminated oligomer mixts. of stoichiometrically tailored average lengths. The use of bisphenol A, 4,4-thiodiphenol, and resorcinol provided 3 families of Br-terminated oligomer mixts. which were subsequently converted in 2 steps to acetylene terminated matrix resin systems for composites. Column chromatog. sepns. on the resins were used both the characterize the oligomer composition and to isolate for identification the major impurities present. Thermoanal. data was obtained on the uncured and cured resins. This preparative method was also used to synthesize a monoethynl-terminated reactive diluent from 3-phenoxyphenol.

CC 37-3 (Plastics Manufacture and Processing)

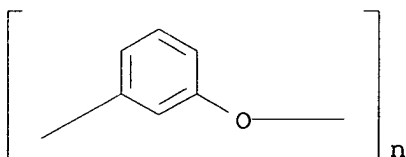
ST acetylene terminated resin prepn bisphenol; bisphenol acetylene terminated resin prepn; thiodiphenol polymer acetylene terminated; resorcinol polymer acetylene terminated

IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, ethynyl group-terminated, preparation of tailored-length)

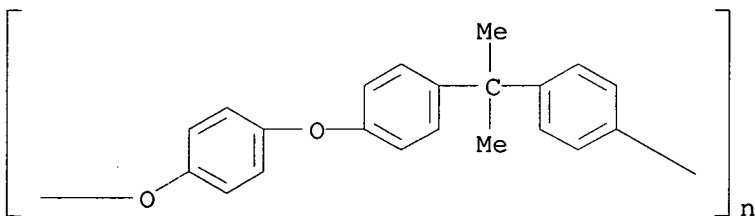
IT 25190-64-1DP, acetylene-terminated 30112-42-6DP,  
 acetylene-terminated 30308-05-5DP, acetylene-terminated  
 31710-87-9DP, acetylene-terminated 31710-88-0DP,  
 acetylene-terminated 89787-99-5DP, acetylene-terminated  
 89788-00-1DP, acetylene-terminated 89871-64-7DP,  
 acetylene-terminated 89871-65-8DP, acetylene-terminated  
 89871-66-9DP, acetylene-terminated 106335-34-6DP,  
 acetylene-terminated 106335-37-9DP, acetylene-terminated  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of tailored-length)

IT 25190-64-1DP, acetylene-terminated 31710-87-9DP,  
 acetylene-terminated 31710-88-0DP, acetylene-terminated  
 89787-99-5DP, acetylene-terminated 89788-00-1DP,  
 acetylene-terminated 89871-66-9DP, acetylene-terminated  
 106335-34-6DP, acetylene-terminated 106335-37-9DP,  
 acetylene-terminated  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of tailored-length)

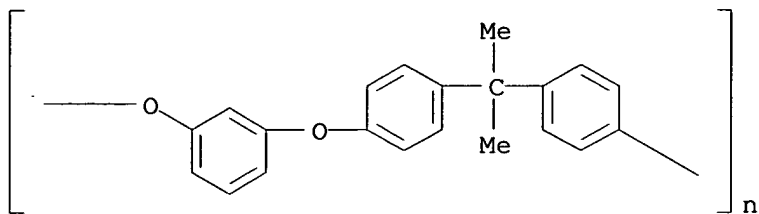
RN 25190-64-1 HCAPLUS  
 CN Poly(oxy-1,3-phenylene) (9CI) (CA INDEX NAME)



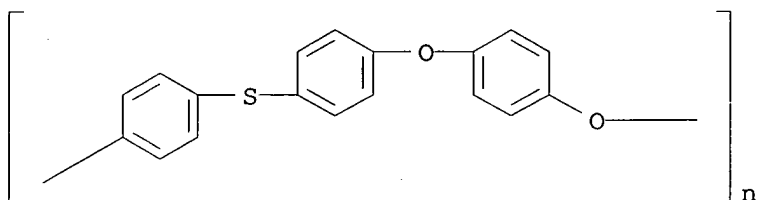
RN 31710-87-9 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



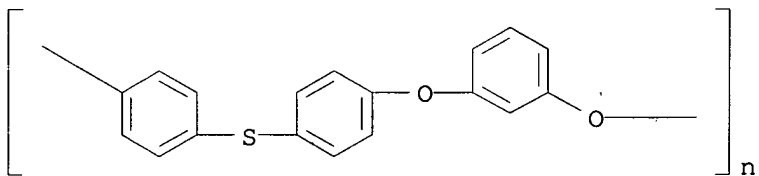
RN 31710-88-0 HCAPLUS  
 CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene]  
 (9CI) (CA INDEX NAME)



RN 89787-99-5 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenethio-1,4-phenylene) (9CI) (CA INDEX NAME)



RN 89788-00-1 HCAPLUS  
 CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenethio-1,4-phenylene) (9CI) (CA INDEX NAME)

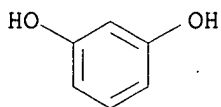


RN 89871-66-9 HCAPLUS  
 CN 1,3-Benzenediol, polymer with 1,3-dibromobenzene (9CI) (CA INDEX NAME)

CM 1

CRN 108-46-3

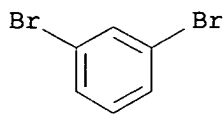
CMF C6 H6 O2



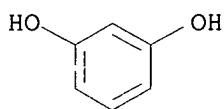
CM 2

CRN 108-36-1

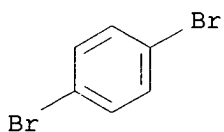
CMF C6 H4 Br2



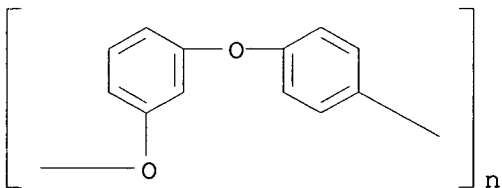
RN 106335-34-6 HCAPLUS  
CN 1,3-Benzenediol, polymer with 1,4-dibromobenzene (9CI) (CA INDEX NAME)  
CM 1  
CRN 108-46-3  
CMF C6 H6 O2



CM 2  
CRN 106-37-6  
CMF C6 H4 Br2



RN 106335-37-9 HCAPLUS  
CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylene) (9CI) (CA INDEX NAME)



L48 ANSWER 39 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1986:573693 HCAPLUS  
DN 105:173693  
TI Polycyanoaryl ether powders  
IN Matsuo, Shigeru; Marakami, Tomoyoshi  
PA Idemitsu Kosan Co., Ltd., Japan  
SO Eur. Pat. Appl., 12 pp.  
CODEN: EPXXDW  
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 186153	A2	19860702	EP 1985-116300	19851220
	EP 186153	A3	19870923		
	EP 186153	B1	19900725		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 61152729	A2	19860711	JP 1984-274090	19841227
	JP 63062532	B4	19881202		
	US 4663427	A	19870505	US 1985-810934	19851219
PRAI	JP 1984-274090	A	19841227		

AB Fine, high-purify poly(cyanoaryl ether) powders can be prepared directly without mech. grinding steps by treating dihalobenzonitriles with alkali metal salts of hydroquinone (I) and/or dihydroxybiphenyl in a solvent until the polymer concentrate reaches 2-15%, then adding a solvent which does not dissolve the polymer but is compatible with the first solvent. Thus, I 272.59, 2,6-dichlorobenzonitrile 430, and K<sub>2</sub>CO<sub>3</sub> 414.6 g were stirred in a mixture of 5 L sulfolane and 2 L toluene under Ar for 2 h at 120°, then 1.5 h at 160°, and 2.5 h at 200° to form a 3.6% copolymer (II) solution, which was then mixed with 3 L water for 1 h to precipitate

500 g II having average particle size 40  $\mu$  and resistivity 2 + 1016  $\Omega$ -cm; vs. 100  $\mu$  and 5 + 1015  $\Omega$ -cm for II prepared without the precipitation step, then mech. pulverized.

IC ICM C08G065-40

CC 37-3 (Plastics Manufacture and Processing)

ST polycyanoaryl ether powder manuf purifn; polyether cyanoaryl powder manuf purifn; soln polymn pptn polyoxyarylene powder; solvent aprotic polymn pptn polyoxyarylene

IT Polyoxyarylenes

Polyoxyphenylenes

RL: USES (Uses)

(cyano, manufacture of, by polymerization in aprotic solvents and precipitation by

nonsolvents for high purity and fine particle size)

IT Solvents

(aprotic, polar, polymerization in, of dihalobenzonitriles and dihydric phenol

salts, with precipitation by nonsolvents for high polymer purity and fine particle size)

IT Solvents

(polar, precipitation by, of poly(cyanoaryl ether) solns., for powdered polymer

manufacture with high purity and fine particle size)

IT Polymerization

(solution, of dihalobenzonitriles with dihydric phenol salts in polar aprotic solvents with precipitation by nonsolvents for high polymer purity

and

fine particle size)

IT 94196-53-9P 94196-54-0P 99807-39-3P

104677-83-0P

RL: PREP (Preparation)

(manufacture of, by polymerization in aprotic solvents and precipitation by nonsolvents,

for high purity and fine particle size)

IT 67-68-5, uses and miscellaneous 70-29-1 79-16-3 123-39-7 126-33-0

872-50-4, uses and miscellaneous

RL: USES (Uses)



(polymerization in, of dihalobenzonitriles and dihydric phenol salts, with precipitation by nonsolvents for high polymer purity and fine particle size)

IT 64-17-5, uses and miscellaneous 67-56-1, uses and miscellaneous  
 67-64-1, uses and miscellaneous 71-23-8, uses and miscellaneous  
 71-36-3, uses and miscellaneous 78-93-3, uses and miscellaneous  
 79-34-5 108-10-1 3068-88-0 7732-18-5, uses and miscellaneous

RL: USES (Uses)

(precipitation by, of poly(cyanoaryl ether) solns., to obtain finely powdered

polymer with high purity)

IT 64-17-5, uses and miscellaneous 67-56-1, uses and miscellaneous  
 67-64-1, uses and miscellaneous 71-23-8, uses and miscellaneous  
 71-36-3, uses and miscellaneous 78-93-3, uses and miscellaneous  
 79-34-5 108-10-1 3068-88-0 7732-18-5, uses and miscellaneous

RL: USES (Uses)

(precipitation by, of poly(cyanoaryl ether) solns., to obtain finely powdered

polymer with high purity)

IT 94196-53-9P 94196-54-0P 104677-83-0P

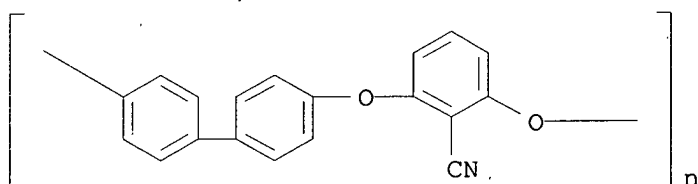
RL: PREP (Preparation)

(manufacture of, by polymerization in aprotic solvents and precipitation by nonsolvents,

for high purity and fine particle size)

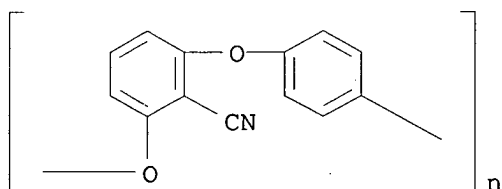
RN 94196-53-9 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 94196-54-0 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



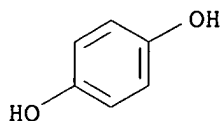
RN 104677-83-0 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol dipotassium salt (9CI) (CA INDEX NAME)

CM 1

CRN 4554-13-6

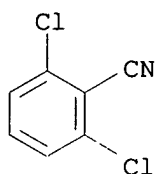
CMF C6 H6 O2 . 2 K



● 2 K

CM 2

CRN 1194-65-6  
CMF C7 H3 Cl2 N



L48 ANSWER 40 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1986:130489 HCAPLUS

DN 104:130489

TI Cyanoaryloxy polymer

IN Matsuo, Shigeru; Murakami, Tomoyoshi

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60179424	A2	19850913	JP 1984-34294	19840227
	JP 63062527	B4	19881202		
	JP 02167338	A2	19900627	JP 1989-281629	19891030
PRAI	JP 1984-34294		19840227		

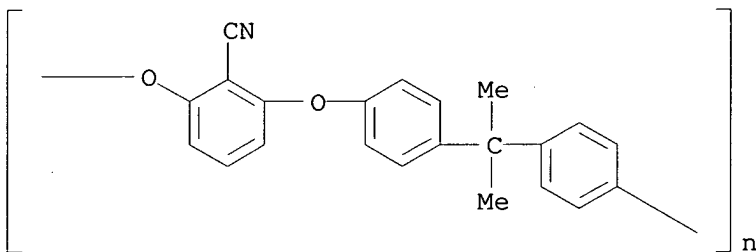
AB Cyanoaryloxy polymer is prepared with controlled mol. weight from dihalobenzonitrile  $R_2C_6H_3CN$  ( $R = F, Cl$ ) and dihydric phenol alkali salt MOZOM ( $M =$  alkali metal;  $Z = 4,4'$ -biphenylene, oxydi- $p$ -phenylene, thiodi- $p$ -phenylene, sulfonyldi- $p$ -phenylene, and  $p$ - $C_6H_4Z_1C_6H_4$ - $p$  where  $Z_1 = Cl-13$  divalent hydrocarbyl, using a monohalobenzonitrile as the controlling agent. Thus, 2,6-dichlorobenzonitrile 0.05,  $p,p'$ -biphenol 0.05,  $K_2CO_3$  0.05, and 4-chlorobenzonitrile 0.001 mol were stirred with 40 mL sulfolane under Ar and heated at  $230^\circ$  for 30 min. The polymer precipitated from MeOH weighed 14.4 g and had intrinsic viscosity at  $30^\circ$  0.8 dL/g, glass temperature  $198^\circ$ , and decomposition temperature (in air)  $547^\circ$ .

IC ICM C08G065-40

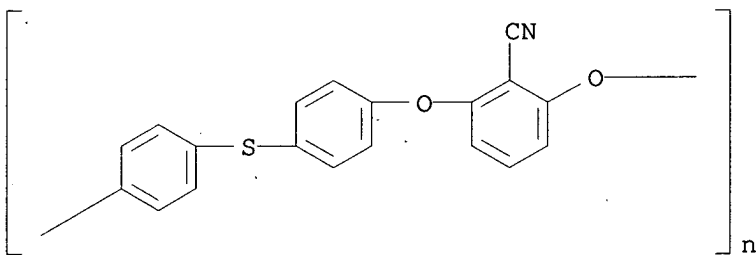
CC 35-5 (Chemistry of Synthetic High Polymers)

ST cyanoaryloxy polymer mol wt control; halobenzonitrile polymn dihydric

phenol  
 IT Polyethers  
 RL: PREP (Preparation)  
 (aromatic, cyano-containing, preparation of, mol. weight control in)  
 IT Polysulfones  
 RL: PREP (Preparation)  
 (polyether-, cyano-containing, preparation of, mol. weight control in)  
 IT Nitriles, polymers  
 RL: PREP (Preparation)  
 (polyether-poly-, aryl, preparation of, mol. weight control in)  
 IT Polyethers  
 RL: PREP (Preparation)  
 (polysulfone-, cyano-containing, preparation of, mol. weight control in)  
 IT 623-03-0  
 RL: USES (Uses)  
 (mol. weight control agents, in polymerization of dihydric phenols with dihalobenzonitriles)  
 IT 70445-08-8P **70445-20-4P 76056-29-6P**  
**94196-53-9P** 94196-69-7P 101181-33-3P 101181-34-4P  
**101181-35-5P** 101181-36-6P  
 RL: **PREP (Preparation)**  
 (preparation of, mol. weight control in)  
 IT **70445-20-4P 76056-29-6P 94196-53-9P**  
**101181-35-5P**  
 RL: **PREP (Preparation)**  
 (preparation of, mol. weight control in)  
 RN 70445-20-4 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)

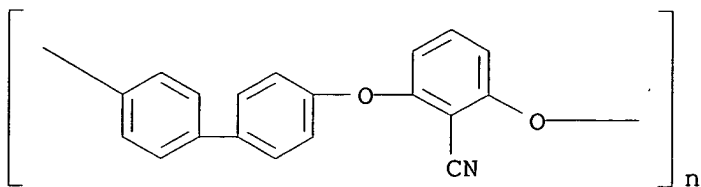


RN 76056-29-6 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI)  
 (CA INDEX NAME)



RN 94196-53-9 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



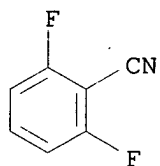
RN 101181-35-5 HCAPLUS

CN Benzonitrile, 2,6-difluoro-, polymer with 1,4-benzenediol and [1,1'-biphenyl]-4,4'-diol (9CI) (CA INDEX NAME)

CM 1

CRN 1897-52-5

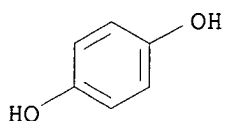
CMF C7 H3 F2 N



CM 2

CRN 123-31-9

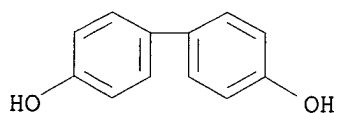
CMF C6 H6 O2



CM 3

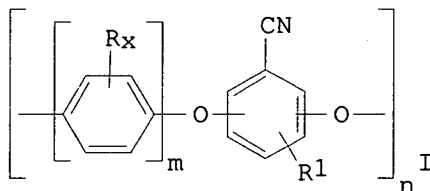
CRN 92-88-6

CMF C12 H10 O2



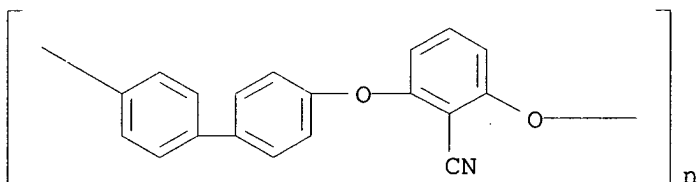
AN 1985:46460 HCAPLUS  
 DN 102:46460  
 TI Polyarylnitrile polymers  
 IN Maresca, Louis Michael; Farnham, Alford Gailey; Schwab, Thomas Harry;  
 Steiner, Ulrich Alfred  
 PA Union Carbide Corp. , USA  
 SO Eur. Pat. Appl., 15 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 121257	A2	19841010	EP 1984-103558	19840330
	EP 121257	A3	19850403		
	EP 121257	B1	19861029		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AU 8426287	A1	19841004	AU 1984-26287	19840330
	AU 567730	B2	19871203		
	JP 59206433	A2	19841122	JP 1984-61321	19840330
	JP 62044016	B4	19870917		
	AT 23172	E	19861115	AT 1984-103558	19840330
	CA 1241795	A1	19880906	CA 1984-451040	19840330
	US 4912192	A	19900327	US 1985-758561	19850723
	US 4963643	A	19901016	US 1989-345957	19890501
PRAI	US 1983-480737	A	19830331		
	EP 1984-103558	A	19840330		
	US 1985-758561	A3	19850723		
GI					

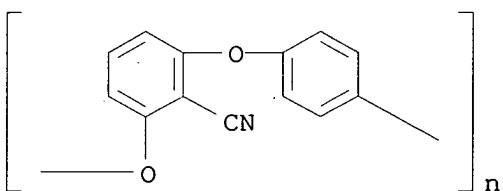


AB A crystalline polymer with reduced viscosity in p-chlorophenol at 50°  
 ≥0.3 dL/g has structure I (R = Cl-4 alkyl, Cl-4 alkoxy, halogen; R1  
 = H, CN; m = 1-3; x = 0-4) and is prepared by reacting equimolar amts. of  
 dihydric phenol and a benzonitrile derivative in a mixture of a dipolar aprotic  
 solvent and an azeotroping solvent with azeotropic removal of water at  
 <200°, followed by heating at >200° for mol. weight increase.  
 Thus, a mixture of 1.01 mol 2,6-dichlorobenzonitrile, 1.00 mol hydroquinone,  
 0.02 mol p-phenylphenol, 1.20 mol K2CO3, 200 mL toluene, and 978 mL  
 sulfolane was purged with N at room temperature and heated to 160° for 1  
 h with azeotropic removal of water, after which it was heated to  
 225° with addition of toluene to insure continuous dehydration. After  
 being dried at 200° the polymer [94196-70-0] had reduced  
 viscosity 1.49 and a molded specimen had tensile strength 14,100 psi,  
 elongation 18%, pendulum impact strength 121 ft-lb/in.3, glass temperature  
 175°, and m.p. 380°.  
 IC C08G065-40  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 ST cyano substituted arom polyether; hydroquinone dichlorobenzonitrile

copolymn  
 IT Polyoxyphenylenes  
 RL: USES (Uses)  
 (cyano-substituted, manufacture of)  
 IT Polymerization  
 (of dichlorobenzonitrile with hydroquinone or biphenol, with azeotropic water removal)  
 IT Polyethers  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (aromatic, cyano-containing, manufacture of)  
 IT Nitriles, polymers  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (polyether-poly-, aryl, manufacture of)  
 IT 94196-53-9P 94196-54-0P 94196-69-7P  
 94196-70-0P  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 94196-53-9P 94196-54-0P 94196-70-0P  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 94196-53-9 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy[1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



RN 94196-54-0 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)

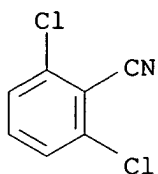


RN 94196-70-0 HCAPLUS  
 CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

CM 1

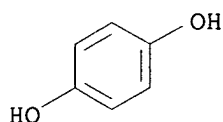
CRN 1194-65-6

CMF C7 H3 Cl2 N



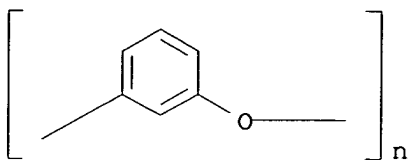
CM 2

CRN 123-31-9  
CMF C6 H6 O2



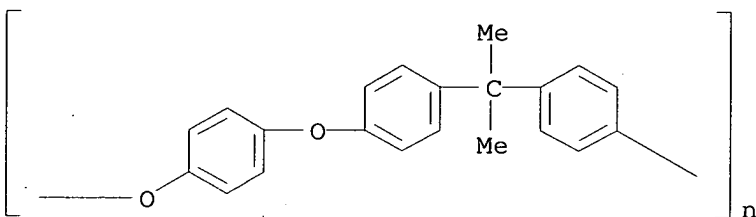
L48 ANSWER 42 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1984:175733 HCAPLUS  
DN 100:175733  
TI New low-cost acetylene terminated resins from bisphenols  
AU Hedberg, Frederick L.; Unroe, Marilyn R.; Lindley, Patricia M.; Feld, William A.  
CS MLBP, Air Force Wright Aeronaut. Lab., Wright-Patterson Air Force Base, OH, 45433, USA  
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1983), 24(1), 153-4  
CODEN: ACPPAY; ISSN: 0032-3934  
DT Journal  
LA English  
AB Acetylene-terminated bisphenol resins are prepared by the Ullmann reaction of a bisphenol with dibromobenzene followed by replacement of terminal Br with ethynyl groups. The bisphenols used were bisphenol A, resorcinol, and 4,4'-thiodiphenol.  
CC 37-3 (Plastics Manufacture and Processing)  
ST bisphenol acetylene bromobenzene polymer; polyoxyphenylene acetylene termination; polythioarylene acetylene termination  
IT Polyoxyphenylenes  
Polythioarylenes  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(ethynyl group-terminated, preparation of)  
IT **25190-64-1P** 30112-42-6DP, acetylene-terminated 30112-42-6P  
30308-05-5DP, acetylene-terminated 30308-05-5P **31710-87-9P**  
**31710-88-0P 89787-99-5P 89788-00-1P**  
89871-64-7DP, acetylene-terminated 89871-64-7P 89871-65-8DP,  
acetylene-terminated 89871-65-8P **89871-66-9P**  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation of)  
IT **25190-64-1P 31710-87-9P 31710-88-0P**  
**89787-99-5P 89788-00-1P 89871-66-9P**  
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(preparation of)  
RN 25190-64-1 HCAPLUS

CN Poly(oxy-1,3-phenylene) (9CI) (CA INDEX NAME)



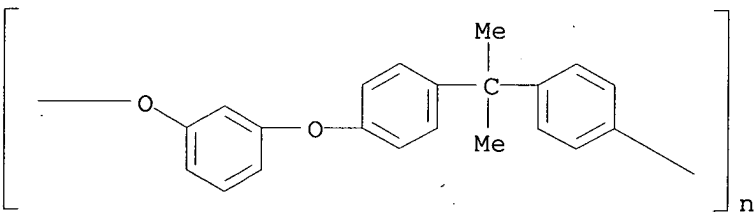
RN 31710-87-9 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



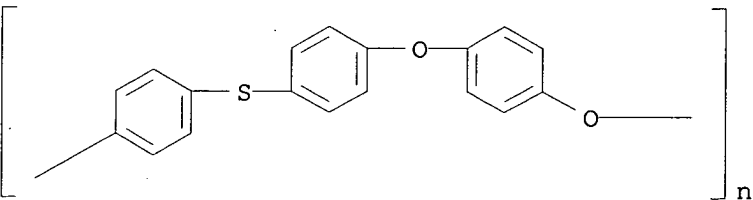
RN 31710-88-0 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 89787-99-5 HCAPLUS

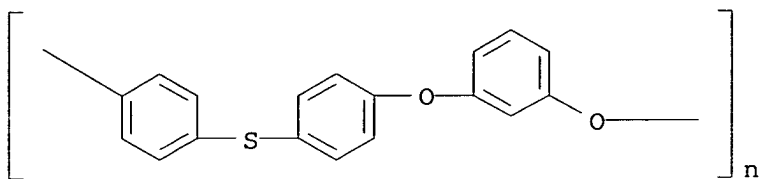
CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenethio-1,4-phenylene) (9CI) (CA INDEX NAME)



RN 89788-00-1 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenethio-1,4-phenylene) (9CI) (CA INDEX NAME)

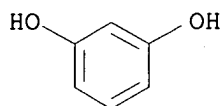




RN 89871-66-9 HCAPLUS  
 CN 1,3-Benzenediol, polymer with 1,3-dibromobenzene (9CI) (CA INDEX NAME)

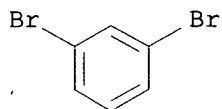
CM 1

CRN 108-46-3  
 CMF C6 H6 O2



CM 2

CRN 108-36-1  
 CMF C6 H4 Br2



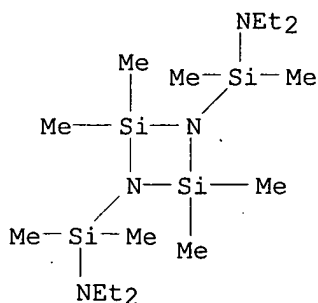
L48 ANSWER 43 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1968:427934 HCAPLUS  
 DN 69:27934  
 TI Chemistry of the silicon-nitrogen bond. XII. Cyclodisilazane polymers  
 AU Fink, Walter  
 CS Monsanto Res., Zurich, Switz.  
 SO Helvetica Chimica Acta (1968), 51(4), 954-74  
 CODEN: HCACAV; ISSN: 0018-019X  
 DT Journal  
 LA German  
 GI For diagram(s), see printed CA Issue.  
 AB Poly(2,2,4,4-tetrahydrocarbylcyclodisilazan-1,3-ylenearylenes) [I, R and R' = Me, H, or Ph and X = p-(C6H4)2-, m-(C6H4)2O, or (m-C6H4O)2C6H4-m] were prepared by the pyrolysis of N,N'-diethylsilanediamines with aromatic diamines or by the catalytic silylation of aromatic or aliphatic diamines with RR'SiH2. Poly[dihydrocarbylsilylene(2,2,4,4-tetrahydrocarbylcyclodisilazan-1,3-ylene)dihydrocarbylsilyleneoxyaryleneoxy] (II) were prepared by the reaction of  $\alpha,\omega$ -bis(hydrocarbylamino)silyl-substituted monomeric or oligomeric cyclodisilazanes with bisphenols and bifunctional silanols. The latter polymers showed very high thermal stability.

CC 35 (Synthetic High Polymers)  
 ST cyclodisilazane arylene polymers; arylene cyclodisilazane polymers;  
 polymers cyclodisilazane arylene  
 IT Cyclodisilazane, 1,3-bis[(diethylamino)diphenylsilyl]-2,2,4,4-tetraphenyl-  
 , polymer with 4,4'-biphenyldiol  
 Cyclodisilazane, 1,3-bis[(diethylamino)diphenylsilyl]-2,2,4,4-tetraphenyl-  
 , polymer with p-phenylenebis[diphenylsilanol]  
 Silanol, p-phenylenebis[diphenyl-, polymer with 1,3-  
 bis[(diethylamino)diphenylsilyl]-2,2,4,4-tetraphenylcyclodisilazane  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 IT 287-62-7DP, Cyclodisilazane, derivs., polymers 288-41-5DP,  
 1,3-Diaza-2-silacyclopentane, derivs., polymers 290-02-8DP,  
 1,3-Diaza-2-silacyclohexane, derivs., polymers 3284-08-0P 4082-85-3P  
 5577-69-5P 5958-77-0P 7036-87-5P 7166-22-5P 7652-20-2P  
 7653-24-9P 14995-03-0P 17612-46-3P 19796-14-6P 20119-32-8P  
 20119-33-9P 20119-34-0P 20655-36-1P 20655-38-3P 20655-40-7P  
 20761-46-0P 26659-33-6P 26659-34-7P 26659-35-8P 26659-36-9P  
 26659-37-0P 26659-38-1P 26659-39-2P 26659-41-6P 26659-42-7P  
 26659-43-8P 26659-44-9P 26680-39-7P 28407-02-5P 29036-99-5P  
 29037-00-1P 29037-01-2P 29037-03-4P 29037-05-6P 29037-06-7P  
 29037-07-8P 29037-08-9P 29037-09-0P 29037-10-3P 29037-11-4P  
 29037-12-5P 29037-13-6P 29037-14-7P 29037-15-8P 29037-16-9P  
 29037-17-0P 29037-18-1P 29037-19-2P 29037-20-5P **29037-21-6P**  
 29037-22-7P 29037-23-8P 29502-09-8P, 4,4'-Biphenyldiol, polymer with  
 1,3-bis[(diethylamino)diphenylsilyl]-2,2,4,4-tetraphenylcyclodisilazane  
 31759-64-5P 31887-25-9P **31988-28-0P** 32035-35-1P  
**32035-36-2P** 32035-40-8P 32035-41-9P 32053-40-0P  
 32053-46-6P 32053-53-5P 32053-54-6P 32053-55-7P 32053-56-8P  
 32055-10-0P 32055-11-1P 32055-13-3P  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (preparation of)  
 IT **29037-21-6P 31988-28-0P 32035-36-2P**  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (preparation of)  
 RN 29037-21-6 HCAPLUS  
 CN Hydroquinone, tetrachloro-, polymer with 1,3-bis[(diethylamino)dimethylsil  
 yl]-2,2,4,4-tetramethylcyclodisilazane (8CI) (CA INDEX NAME)

CM 1

CRN 17612-46-3

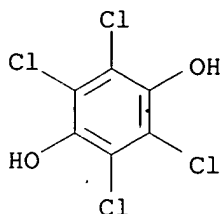
CMF C16 H44 N4 Si4



CM 2

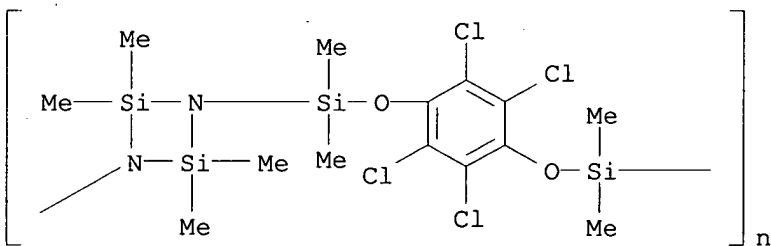
CRN 87-87-6

CMF C6 H2 Cl4 O2



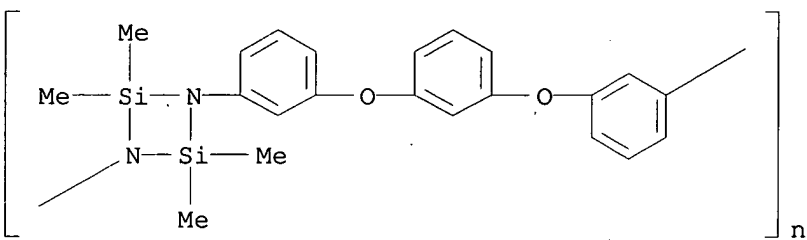
RN 31988-28-0 HCAPLUS

CN Poly[(2,2,4,4-tetramethylcyclodisilazane-1,3-diyl)(dimethylsilylene)oxy(2,3,5,6-tetrachloro-1,4-phenylene)oxy(dimethylsilylene)] (9CI) (CA INDEX NAME)



RN 32035-36-2 HCAPLUS

CN Poly[(2,2,4,4-tetramethylcyclodisilazane-1,3-diyl)-1,3-phenyleneoxy-1,3-phenyleneoxy-1,3-phenylene] (9CI) (CA INDEX NAME)



=>

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> D QUE

L3 22 SEA FILE=REGISTRY ABB=ON (618905-99-0/BI OR 10025-69-1/BI OR  
104-15-4/BI OR 106335-34-6/BI OR 106335-37-9/BI OR 108-45-2/BI  
OR 122-39-4/BI OR 13080-89-2/BI OR 25190-64-1/BI OR 268734-11-8  
/BI OR 2783-17-7/BI OR 31643-49-9/BI OR 591-50-4/BI OR  
59326-56-6/BI OR 618906-00-6/BI OR 618906-01-7/BI OR 618906-02-  
8/BI OR 618906-03-9/BI OR 7681-65-4/BI OR 7784-27-2/BI OR  
7787-70-4/BI OR 89871-66-9/BI)  
L5 STR

HO~Cb~OH  
1 2 3

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY UNS AT 2

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L6 STR

X~Cb~X  
1 2 3

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY UNS AT 2

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L8 SCR 2043

L10 378 SEA FILE=REGISTRY SSS FUL L5 AND L6 AND L8

L11 496 SEA FILE=REGISTRY POLYLINK L10

L16 601 SEA FILE=HCAPLUS ABB=ON L11

L17 339 SEA FILE=HCAPLUS ABB=ON L16(L) (PREP OR IMF OR SPN)/RL

L18 23 SEA FILE=HCAPLUS ABB=ON L17 AND OLIGOMER?

L19 2 SEA FILE=REGISTRY ABB=ON L3 AND 1/CU

L20 6596 SEA FILE=HCAPLUS ABB=ON L19

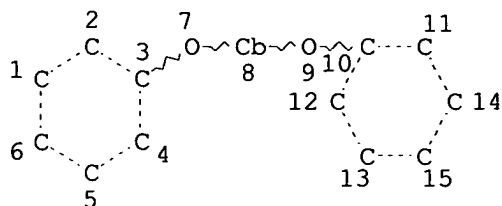
L22 14464 SEA FILE=HCAPLUS ABB=ON L20 OR CUI OR CUBR OR (COPPER OR  
CUPROUS) (W) (IODIDE OR BROMIDE)

L23 2 SEA FILE=HCAPLUS ABB=ON L17 AND L22

L24 1 SEA FILE=HCAPLUS ABB=ON L17 AND ARYLETHER?

L26 24 SEA FILE=HCAPLUS ABB=ON L18 OR L23 OR L24

L27 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY UNS AT 8

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L30 5657 SEA FILE=REGISTRY SSS FUL L27 AND L8  
 L32 3969 SEA FILE=REGISTRY ABB=ON L30 AND 1-2/NC  
 L33 250933 SEA FILE=REGISTRY ABB=ON PETH/PCT  
 L34 3687 SEA FILE=REGISTRY ABB=ON L32 AND L33  
 L35 6943 SEA FILE=HCAPLUS ABB=ON L34  
 L36 1710 SEA FILE=HCAPLUS ABB=ON L35(L) (PREP OR IMF OR SPN)/RL  
 L37 9 SEA FILE=HCAPLUS ABB=ON L22 AND L36  
 L38 43 SEA FILE=HCAPLUS ABB=ON L36 AND L16  
 L40 143 SEA FILE=HCAPLUS ABB=ON L36 AND OLIGOMER?  
 L41 21 SEA FILE=HCAPLUS ABB=ON L40 AND (ARYL ETHER? OR ARYLETHER? OR AROM?(2A) ETHER?)  
 L42 212 SEA FILE=REGISTRY ABB=ON L33 AND L11  
 L43 14 SEA FILE=HCAPLUS ABB=ON L26 AND L42  
 L47 42 SEA FILE=HCAPLUS ABB=ON L43 OR L37 OR L41  
 L48 43 SEA FILE=HCAPLUS ABB=ON L38 OR L38  
 L49 82 SEA FILE=HCAPLUS ABB=ON L47 OR L38  
 L50 39 SEA FILE=HCAPLUS ABB=ON L49 NOT L48

=> D L50 1-39 BIB ABS HITIND HITSTR 1-39

L50 ANSWER 1 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:904362 HCAPLUS

TI Optical waveguides having microporous polybenzoxazole clad layers with low transmission loss

IN Otsuki, Tomohito

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004301963	A2	20041028	JP 2003-92928	20030328
PRAI	JP 2003-92928		20030328		

AB The clad layers are obtained by thermally condensing and crosslinking polyamides depicted as  $H_2N\text{Y}NHC:OZ[C:ONHW(OH)2NHC:OZ]_mC:ONHYNH_2$  ( $m = 1-1000$ ;  $W =$  tetravalent aromatic group;  $Z =$  divalent organic group;  $Y =$  divalent)

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

group containing thermally decomposable **oligomer**).

IC ICM G02B006-12  
ICS C08G073-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38

IT **612090-40-1DP**, reaction products with polyoxypropylene bisaminopropyl ether  
RL: DEV (Device component use); **IMF (Industrial manufacture)**;  
**PREP (Preparation)**; USES (Uses)  
(core; optical waveguides having microporous polybenzoxazole clad layers with low transmission loss)

IT **612090-40-1DP**, reaction products with polyoxypropylene bisaminopropyl ether  
RL: DEV (Device component use); **IMF (Industrial manufacture)**;  
**PREP (Preparation)**; USES (Uses)  
(core; optical waveguides having microporous polybenzoxazole clad layers with low transmission loss)

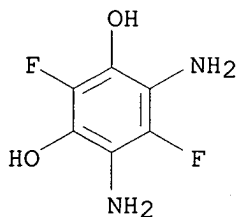
RN 612090-40-1 HCAPLUS

CN [1,1'-Biphenyl]-4,4'-dicarbonyl dichloride, 2,2'-bis(trifluoromethyl)-, polymer with 4,6-diamino-2,5-difluoro-1,3-benzenediol and 4,4'-oxybis[benzoyl chloride] (9CI) (CA INDEX NAME)

CM 1

CRN 276870-15-6

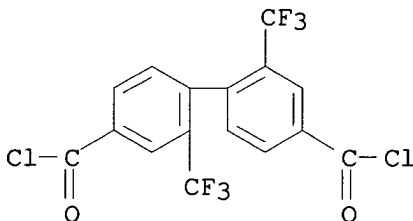
CMF C6 H6 F2 N2 O2



CM 2

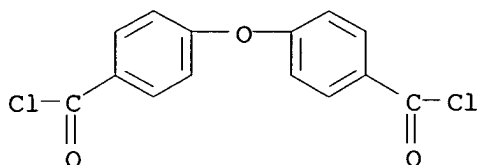
CRN 86536-25-6

CMF C16 H6 Cl2 F6 O2



CM 3

CRN 7158-32-9  
CMF C14 H8 C12 O3



L50 ANSWER 2 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:213527 HCAPLUS

DN 141:157887

TI Epoxide **oligomer** for binding composition, method for preparation thereof, and a method for preparing binding composition based on this **oligomer**

IN Meshcheryakov, Yu. Ya.; Bukhtienko, V. I.; Pluzhnikov, V. N.; Chalmaev, V. A.; Burochkin, Yu. V.

PA Russia

SO Russ., No pp. given

CODEN: RUXXE7

DT Patent

LA Russian

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2221816	C2	20040120	RU 2001-129526	20011102
PRAI	RU 2001-129526		20011102		

AB According to resent invention, epoxide **oligomer** with mol. weight 1500-2000 and with 8-10 wt % epoxide group content is prepared via epoxidn. of conjugated aromatic hydroxyphenylene with toluene solution of diphenylolpropane-based epoxy resin having mol. weight 350-380, said epoxidn. being carried out at 95-115° in the presence of 2-methylimidazole catalyst in concentration 0.03- 0.035% of the weight of resin.

Hydroxyphenylene is prepared by oxidative polycondensation of resorcinol, pyrocatechol, and alkylresorcinol. Disclosed is a method for preparing binding composition by adding an aromatic diamine (diaminodiphenylmethane, diaminodiphenyl sulfone) hardener to the epoxide **oligomer**.

IC ICM C08G059-14

ICS C08G061-00; C08L063-00; C08K005-18

CC 37-3 (Plastics Manufacture and Processing)

ST epoxidn resorcinol pyrocatechol oxidn polymn **oligomer** epoxy resin methylimidazole

IT Epoxy resins, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(epoxidn. agent and **oligomeric** product; preparation of epoxide **oligomer** for binding composition and binding composition based on it)

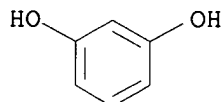
IT Epoxidation

(preparation of epoxide **oligomer** for binding composition and binding composition based on it)

IT 26982-53-6DP, Pyrocatechol homopolymer; epoxidized, crosslinking products with aromatic diamines **26982-54-7DP**, Resorcinol homopolymer, epoxidized, crosslinking products with aromatic diamines

RL: IMF (Industrial manufacture); PRP (Properties); TEM

(Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
 (binder; preparation of epoxide **oligomer** for binding composition and binding composition based on it)  
 IT 25068-38-6, Bisphenol A-epichlorohydrin copolymer  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (epoxidn. agent; preparation of epoxide **oligomer** for binding composition and binding composition based on it)  
 IT 693-98-1, 2-Methylimidazole  
 RL: CAT (Catalyst use); **USES (Uses)**  
 (epoxidn. catalyst; preparation of epoxide **oligomer** for binding composition and binding composition based on it)  
 IT 67-64-1, Acetone, uses 108-88-3, Toluene, uses  
 RL: NUU (Other use, unclassified); **USES (Uses)**  
 (epoxidn. solvent; preparation of epoxide **oligomer** for binding composition and binding composition based on it)  
 IT 80-08-0DP, 4,4'-Diaminodiphenyl sulfone, crosslinking products with oxidized polypyrocatechol or polyresorcinol epoxidn. product 101-77-9DP, 4,4'-Diaminodiphenylmethane, crosslinking products with oxidized polypyrocatechol or polyresorcinol epoxidn. product  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
 (preparation of epoxide **oligomer** for binding composition and binding composition based on it)  
 IT **26982-54-7DP**, Resorcinol homopolymer, epoxidized, crosslinking products with aromatic diamines  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; **USES (Uses)**  
 (binder; preparation of epoxide **oligomer** for binding composition and binding composition based on it)  
 RN 26982-54-7 HCAPLUS  
 CN 1,3-Benzenediol, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 108-46-3  
 CMF C6 H6 O2



L50 ANSWER 3 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:551561 HCAPLUS  
 DN 139:101549  
 TI Dielectric polymer compositions containing phenylactylene (di)adamantane monomer for microelectronic applications  
 IN Apen, Paul G.; Bedwell, Brian; Iwamoto, Nancy; Korolev, Boris A.; Lau, Kreisler; Li, Bo  
 PA Honeywell International Inc., USA  
 SO PCT Int. Appl., 123 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003057749	A1	20030717	WO 2001-US50182	20011231
	W: CA, CN, ID, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	CA 2443846	AA	20030717	CA 2001-2443846	20011231
	EP 1461370	A1	20040929	EP 2001-994423	20011231
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	WO 2001-US50182	W	20011231		
AB	The present composition provides a composition comprising: (a) thermosetting component containing a phenylactylene (di)adamantane monomer, and (b) an adhesion promoter. The composition containing 1,3,5,7-tetrakis(4-(phenylethynyl)phenylethynylphenyl)adamantane and polycarbosilane gave a dielec. film, exhibiting improved glass transition temperature and modulus.				
IC	ICM C08G008-10				
	ICS C08G077-00; C08G077-60				
CC	35-5 (Chemistry of Synthetic High Polymers)				
IT	Section cross-reference(s): 76				
	367279-76-3P, 4,6-Bis(adamantyl)resorcinol-(4-fluorophenyl)[3-[(4-fluorophenyl)ethynyl]phenyl]methanone copolymer 561062-78-0P, 4,6-Bis(adamantyl)resorcinol-4,4'-difluorotolane copolymer 561062-80-4P, 4,6-Bis(adamantyl)resorcinol-4,4'-difluorotolane copolymer, sru 561062-82-6P, 4,6-Bis(adamantyl)resorcinol-3,4-difluorotetraphenylcyclopentadienone copolymer 561062-84-8P, 4,6-Bis(adamantyl)resorcinol-3,4-difluorotetraphenylcyclopentadienone copolymer, sru 561062-88-2P, 4,6-Bis(adamantyl)resorcinol-1,4-bis[(4-fluorophenyl)ethynyl]benzene copolymer 561062-90-6P, 4,6-Bis(adamantyl)resorcinol-1,4-bis[(4-fluorophenyl)ethynyl]benzene copolymer, sru 561062-92-8P, 4,6-Bis(diadamantyl)resorcinol-(4-fluorophenyl)[3-[(4-fluorophenyl)ethynyl]phenyl]methanone copolymer 561062-94-0P, 4,6-Bis(diadamantyl)resorcinol-4,4'-difluorotolane copolymer 561062-95-1P, 4,6-Bis(diadamantyl)resorcinol-4,4'-difluorotolane copolymer, sru 561062-96-2P, 4,6-Bis(diadamantyl)resorcinol-1,4-bis[(4-fluorophenyl)ethynyl]benzene copolymer 561062-98-4P, 4,6-Bis(diadamantyl)resorcinol-1,4-bis[(4-fluorophenyl)ethynyl]benzene copolymer, sru				
	RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)				
	(dielec. polymer; production of dielec. polymer compns. containing phenylactylene (di)adamantane monomer for microelectronic applications)				
IT	603-35-0, Triphenylphosphine, uses 7681-65-4, Copper iodide (CuI) 7727-15-3, Aluminum bromide 13965-03-2, Dichlorobis(triphenylphosphine)palladium				
	RL: CAT (Catalyst use); USES (Uses)				
	(production of dielec. polymer compns. containing phenylactylene (di)adamantane monomer for microelectronic applications)				
IT	561062-80-4P, 4,6-Bis(adamantyl)resorcinol-4,4'-difluorotolane copolymer, sru 561062-84-8P, 4,6-Bis(adamantyl)resorcinol-3,4-difluorotetraphenylcyclopentadienone copolymer, sru 561062-90-6P, 4,6-Bis(adamantyl)resorcinol-1,4-bis[(4-fluorophenyl)ethynyl]benzene copolymer, sru 561062-95-1P, 4,6-Bis(diadamantyl)resorcinol-4,4'-difluorotolane copolymer, sru 561062-98-4P, 4,6-Bis(diadamantyl)resorcinol-1,4-bis[(4-fluorophenyl)ethynyl]benzene copolymer, sru				

RL: **IMF (Industrial manufacture)**; POF (Polymer in formulation);

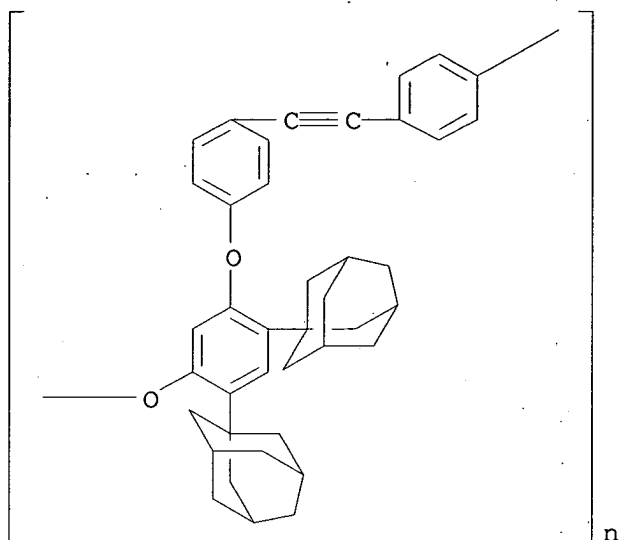
TEM (Technical or engineered material use); **PREP (Preparation)**;

USES (Uses)

(dielec. polymer; production of dielec. polymer compns. containing phenylacetylene (di)adamantane monomer for microelectronic applications)

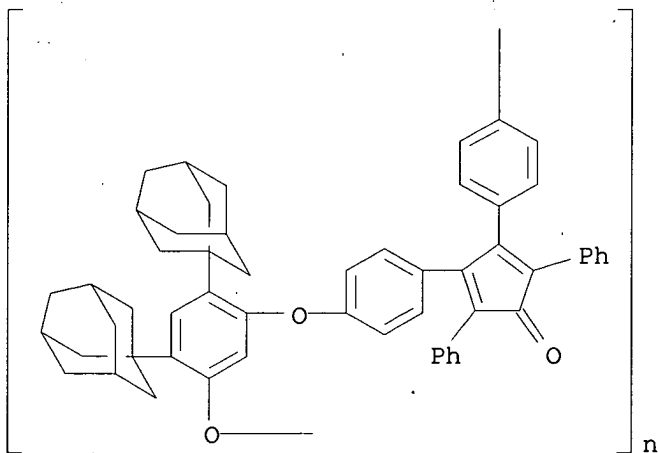
RN 561062-80-4 HCAPLUS

CN Poly[oxy[4,6-bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl)-1,3-phenylene]oxy-1,4-phenylene-1,2-ethynyldiyl-1,4-phenylene] (9CI) (CA INDEX NAME)



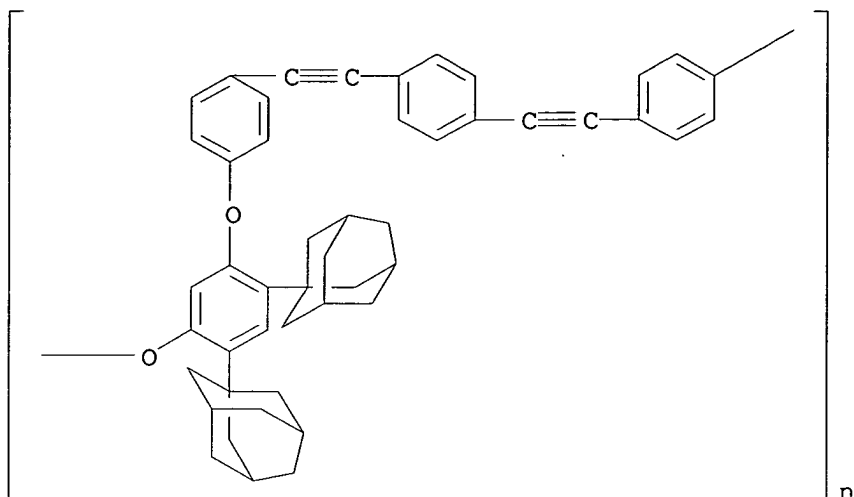
RN 561062-84-8 HCAPLUS

CN Poly[oxy[4,6-bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl)-1,3-phenylene]oxy-1,4-phenylene(4-oxo-3,5-diphenyl-2,5-cyclopentadiene-1,2-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)

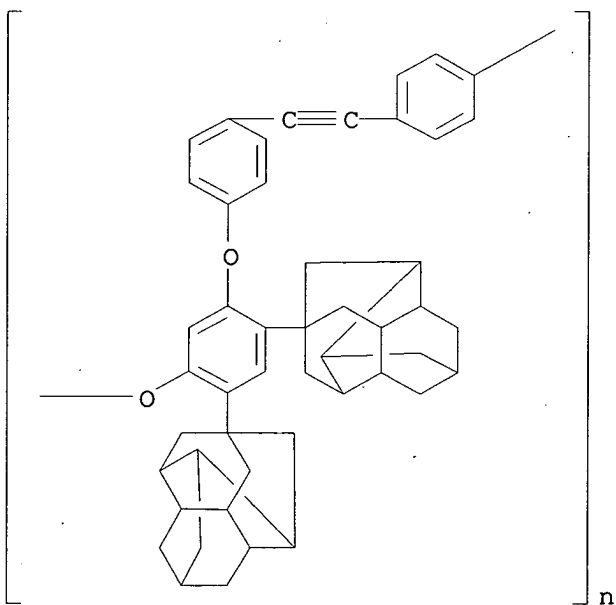


RN 561062-90-6 HCAPLUS

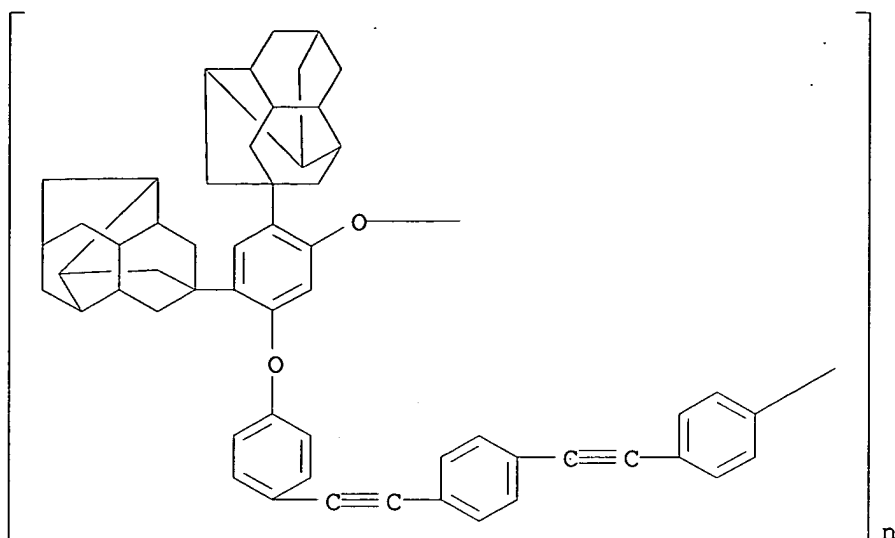
CN Poly[oxy[4,6-bis(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-yl)-1,3-phenylene]oxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN	561062-95-1	HCAPLUS
CN	Poly[oxy[4,6-bis(octahydro-3,5,1,7-[1,2,3,4]butanetetraylnaphthalen-3(2H)-yl)-1,3-phenylene]oxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)	



RN	561062-98-4	HCAPLUS
CN	Poly[oxy[4,6-bis(octahydro-3,5,1,7-[1,2,3,4]butanetetraylnaphthalen-3(2H)-yl)-1,3-phenylene]oxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)	



IT 7681-65-4, Copper iodide (CuI)

RL: CAT (Catalyst use); USES (Uses)

(production of dielec. polymer compns. containing phenylacetylene  
(di)adamantane

monomer for microelectronic applications)

RN 7681-65-4 HCAPLUS

CN Copper iodide (CuI) (8CI, 9CI) (CA INDEX NAME)

Cu-I

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 4 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:76843 HCAPLUS

DN 138:138415

TI Aromatic fluoropolymers having excellent heat resistance and a low  
relative permittivity and uses thereof

IN Yokotsuka, Shunsuke; Takeo, Fusaaki

PA Asahi Glass Co., Ltd., Japan

SO PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DT Patent

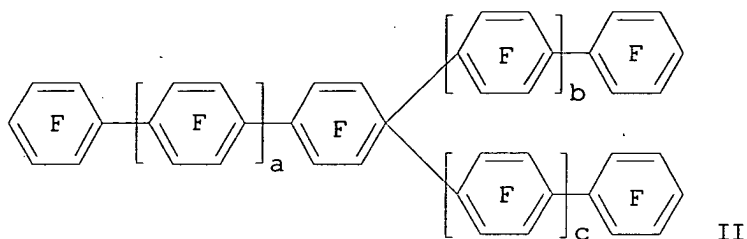
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003008483	A1	20030130	WO 2002-JP6589	20020628
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,				

	CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
	BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
DE 10297034	T 20040729 DE 2002-10297034 20020628
US 2004147710	A1 20040729 US 2004-754601 20040112
PRAI JP 2001-212379	A 20010712
WO 2002-JP6589	W 20020628

GI



AB Polymers having ether linkages are prepared from branched fluorinated aromatic compds. and compds. having a crosslinkable functional group and a phenolic hydroxyl group in the presence of an agent for eliminating HF. Thus, pentafluorobromobenzene (I) was mixed with EtMgBr, CuBr, and 1,3,5-triiodo-2,4,6-trifluorobenzene to give perfluoro(1,3,5-triphenylbenzene), which was treated with a reaction product of I with EtMgBr to give II (a, b, c .apprx.1.2) and polymerized (2.19 g) with 1.37 g 4-(4-fluorophenylethynyl)phenol in AcNMe<sub>2</sub>-toluene-K<sub>2</sub>CO<sub>3</sub> to prepare 2.76 g polymer having 3.0 ethynyl groups.

IC ICM C08G065-40

ICS H01L021-768; H01L023-29; H01L021-52

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

IT 491841-00-0P 491841-01-1P 491841-02-2P **491841-03-3P**

491841-10-2P 491841-12-4P **491841-14-6P 491841-16-8P**

**491841-17-9P** 491841-18-0P 491841-19-1P **491841-21-5P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); **PREP (Preparation)**

(aromatic fluoropolymers having heat resistance and low relative permittivity)

IT **491841-03-3P 491841-14-6P 491841-16-8P**

**491841-17-9P 491841-21-5P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); **PREP (Preparation)**

(aromatic fluoropolymers having heat resistance and low relative permittivity)

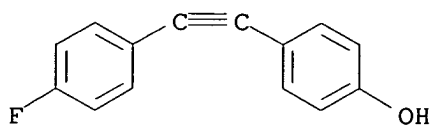
RN 491841-03-3 HCAPLUS

CN 1,3-Benzenediol, polymer with 4-[(4-fluorophenyl)ethynyl]phenol and 2,2',2'',3,3'',4,4',4'',5,5'',6,6',6''-tridecafluoro-5'-(pentafluorophenyl)-1,1':3',1''-terphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 197770-48-2

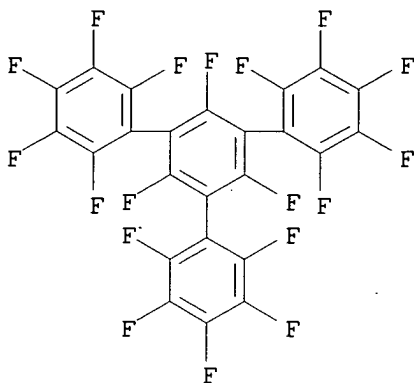
CMF C14 H9 F O



CM 2

CRN 59831-92-4

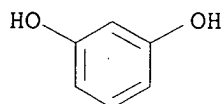
CMF C24 F18



CM 3

CRN 108-46-3

CMF C6 H6 O2



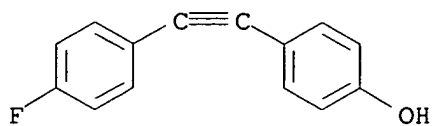
RN 491841-14-6 HCAPLUS

CM 1,3-Benzenediol, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl, 4-[(4-fluorophenyl)ethynyl]phenol and 2,2',2'',3,3'',4,4',4'',5,5'',6,6',6''-tridecafluoro-5'-(pentafluorophenyl)-1,1':3',1''-terphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 197770-48-2

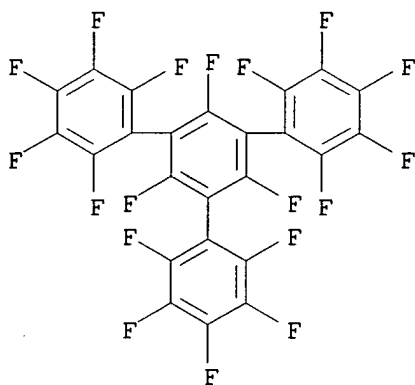
CMF C14 H9 F O



CM 2

CRN 59831-92-4

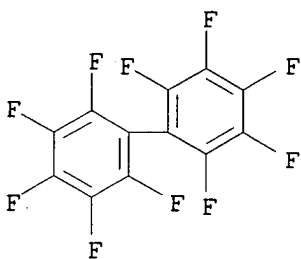
CMF C24 F18



CM 3

CRN 434-90-2

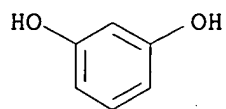
CMF C12 F10



CM 4

CRN 108-46-3

CMF C6 H6 O2



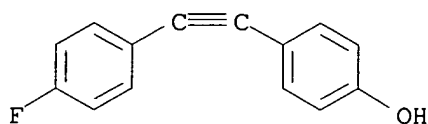
RN 491841-16-8 HCAPLUS

CN 1,2,4-Benzenetriol, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl, 4-[(4-fluorophenyl)ethynyl]phenol, 2,2',2'',3,3'',4,4',4'',5,5'',6,6',6''-tridecafluoro-5'-(pentafluorophenyl)-1,1':3',1''-terphenyl and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 197770-48-2

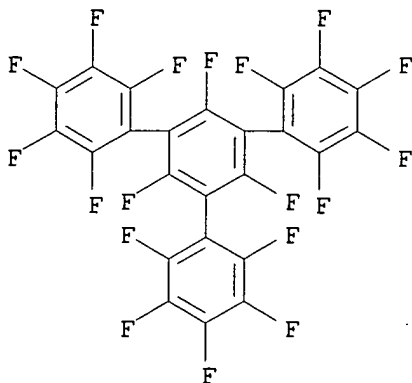
CMF C14 H9 F O



CM 2

CRN 59831-92-4

CMF C24 F18

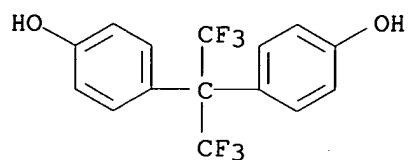


CM 3

CRN 1478-61-1

CMF C15 H10 F6 O2

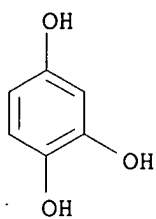




CM 4

CRN 533-73-3

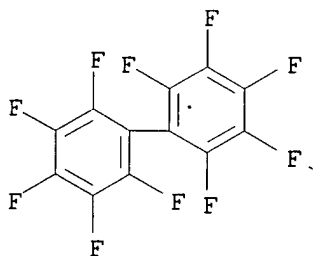
CMF C6 H6 O3



CM 5

CRN 434-90-2

CMF C12 F10



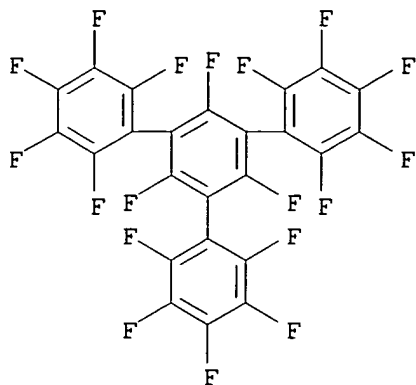
RN 491841-17-9 HCAPLUS

CN 1,3,5-Benzenetriol, polymer with 2,2',3,3',4,5,5',6,6'-nonafluoro-4'-(phenylethynyl)-1,1'-biphenyl and 2,2',2'',3,3'',4,4',4'',5,5'',6,6',6''-tridecafluoro-5'-(pentafluorophenyl)-1,1':3',1''-terphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 59831-92-4

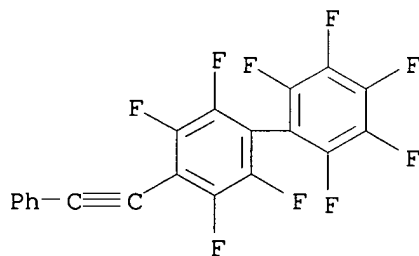
CMF C24 F18



CM 2

CRN 16252-47-4

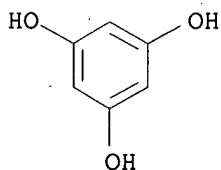
CMF C20 H5 F9



CM 3

CRN 108-73-6

CMF C6 H6 O3

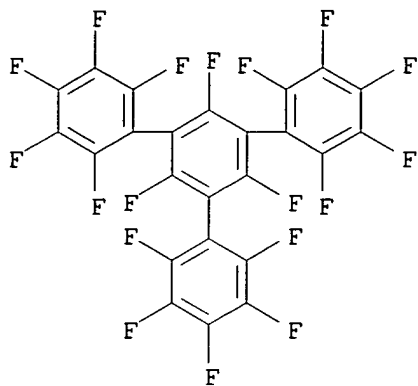


RN 491841-21-5 HCAPLUS

CN 1,3,5-Benzenetriol, polymer with 2,2',3,3',4,4',5,5',6,6'-decafluoro-1,1'-biphenyl, 2,2',3,3',4,5,5',6,6'-nonafluoro-4'-(phenylethynyl)-1,1'-biphenyl, 2,2',2'',3,3'',4,4'',4'',5,5'',6,6',6''-tridecafluoro-5'-(pentafluorophenyl)-1,1':3',1''-terphenyl and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[phenol] (9CI) (CA INDEX NAME)

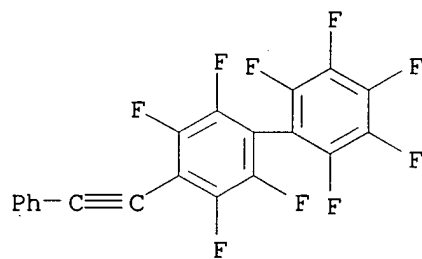
CM 1

CRN 59831-92-4  
CMF C24 F18



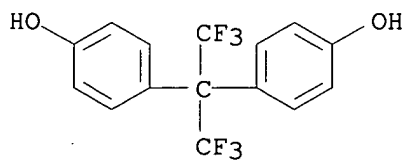
CM 2

CRN 16252-47-4  
CMF C20 H5 F9



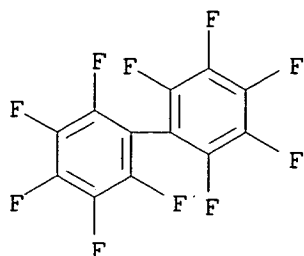
CM 3

CRN 1478-61-1  
CMF C15 H10 F6 O2



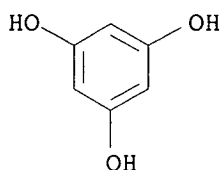
CM 4

CRN 434-90-2  
CMF C12 F10



CM 5

CRN 108-73-6  
CMF C6 H6 O3



RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 5 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1998:762074 HCAPLUS  
DN 130:25768  
TI Hardenable resin composition, hardened resin, and electrical resistance element  
IN Taguchi, Yoshihiro; Watanabe, Masamichi  
PA Alps Electric Co., Ltd., Japan  
SO Ger. Offen., 30 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19821226	A1	19981119	DE 1998-19821226	19980512
	JP 10310619	A2	19981124	JP 1997-121350	19970512
	TW 430673	B	20010421	TW 1998-87105561	19980413
	CN 1199057	A	19981118	CN 1998-101855	19980512
PRAI	JP 1997-121350	A	19970512		

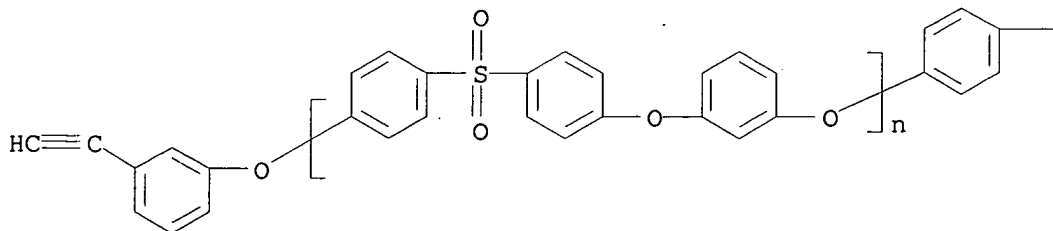
AB The curable composition contains (1) a crosslinking agent having 2-7 benzene rings joined by O, CO, SO<sub>2</sub>, and/or oxymethylene bridges and terminal crosslinking functionality and (2) a crosslinkable polymer having terminal crosslinking functionality and a higher mol. weight than the crosslinking agent and comprised of units each containing benzene rings bridged by O, CO, or SO<sub>2</sub> groups. Thus, (4-BrC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>O in Et<sub>3</sub>N was treated with HC.tplbond.CCMe<sub>2</sub>OH in the presence of Ph<sub>3</sub>P, CuI, and Pd, and the product was heated with NaOH in refluxing MeOH-PhMe to give (4-HC.tplbond.CC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>O (I). Polymerization of 35.0 g (4-FC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CO with 22.463

g

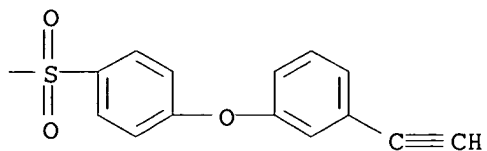
MeC6H3(OH)2-2,4 gave a OH-terminated polymer, which was basified and etherified with ClCH2C6H4CH:CH2 to give a crosslinkable polymer (II) with mol. weight 17,500. A 4:6 mixture of I and II powders was dissolved in Me benzoate to 43% solids, mixed with 3.6 volume% Ketjen Black EC, coated on a polyphenylene sulfide substrate, and baked at 190-230° to give a film with resistance 2000 kΩ.

- IC ICM C08J003-24  
ICS C08L071-10; C08L081-04; C08L081-06; C08L059-00; H01C017-00; H01C007-00; H01B003-30
- CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38, 42
- IT 10401-11-3DP, 3-Ethynylphenol, reaction products with aromatic polyether-polyketones **82200-19-9P** 98731-80-7DP, Bis(4-fluorophenyl) sulfone-resorcinol copolymer, 3-ethynylphenoxy-terminated 124950-77-2DP, 4,4'-Difluorobenzophenone-resorcinol copolymer, 3-ethynylphenoxy-terminated **133150-99-9P** **174231-66-4DP**, reaction products with (chloromethyl)styrene 216320-96-6DP, 4,4'-Difluorobenzophenone-2-methylresorcinol copolymer, reaction products with (chloromethyl)styrene or ethynylphenol **216320-97-7DP**, 4,4'-Difluorobenzophenone-2-methylresorcinol copolymer, SRU, reaction products with (chloromethyl)styrene or ethynylphenol **216320-98-8P** **216375-59-6P**  
RL: **IMF (Industrial manufacture)**; RCT (Reactant); TEM (Technical or engineered material use); **PREP (Preparation)**; RACT (Reactant or reagent); USES (Uses)  
(curable aromatic resin composition for elec. resistance element)
- IT 119799-53-0DP, tert-Butylhydroquinone-4,4'-difluorobenzophenone copolymer, reaction products with ethynylphenol 119822-48-9P **162715-35-7P** **162715-40-4DP**, 3-ethynylphenoxy-terminated  
RL: **IMF (Industrial manufacture)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(curable aromatic resin composition for elec. resistance element)
- IT **82200-19-9P** **133150-99-9P** **174231-66-4DP**, reaction products with (chloromethyl)styrene **216320-97-7DP**, 4,4'-Difluorobenzophenone-2-methylresorcinol copolymer, SRU, reaction products with (chloromethyl)styrene or ethynylphenol **216320-98-8P** **216375-59-6P**  
RL: **IMF (Industrial manufacture)**; RCT (Reactant); TEM (Technical or engineered material use); **PREP (Preparation)**; RACT (Reactant or reagent); USES (Uses)  
(curable aromatic resin composition for elec. resistance element)
- RN 82200-19-9 HCAPLUS
- CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene), α-[4-[[4-(3-ethynylphenoxy)phenyl]sulfonyl]phenyl]-ω-(3-ethynylphenoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A

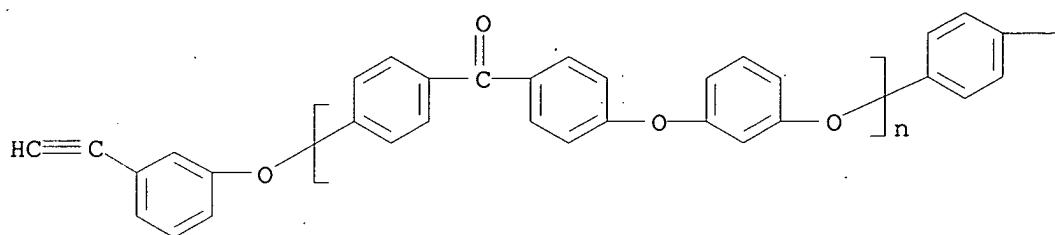


PAGE 1-B

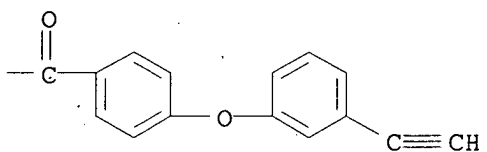


RN 133150-99-9 HCAPLUS  
 CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene),  
 α-[4-[4-(3-ethynylphenoxy)benzoyl]phenyl]-ω-(3-ethynylphenoxy)-  
 (9CI) (CA INDEX NAME)

PAGE 1-A



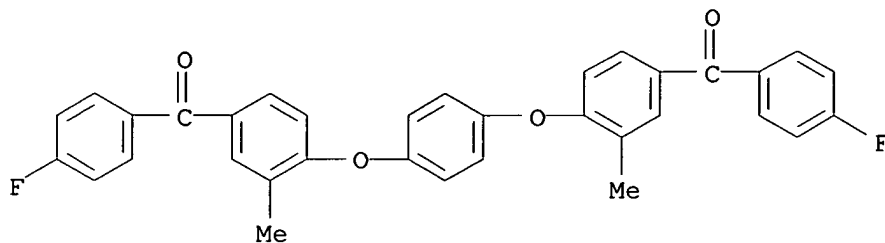
PAGE 1-B



RN 174231-66-4 HCAPLUS  
 CN Methanone, [1,4-phenylenebis[oxy(3-methyl-4,1-phenylene)]]bis[(4-  
 fluorophenyl)-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

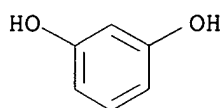
CRN 162715-39-1  
 CMF C34 H24 F2 O4



CM 2

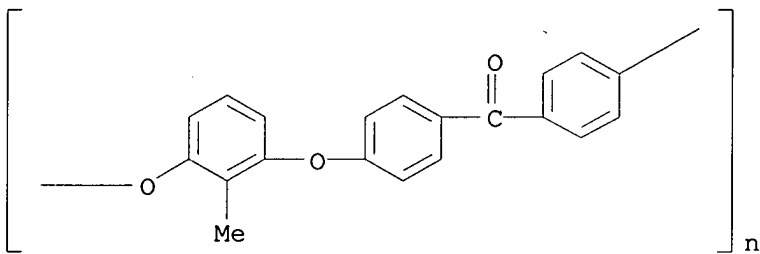
CRN 108-46-3

CMF C6 H6 O2



RN 216320-97-7 HCAPLUS

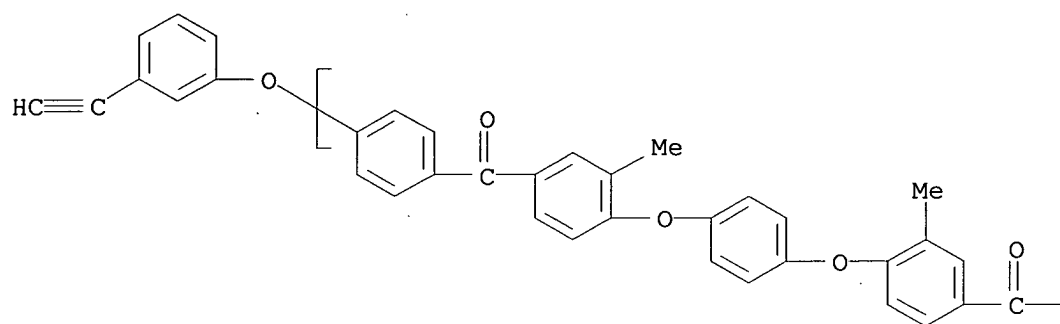
CN Poly[oxy(2-methyl-1,3-phenylene)oxy-1,4-phenylenecarbonyl-1,4-phenylene]  
(9CI) (CA INDEX NAME)



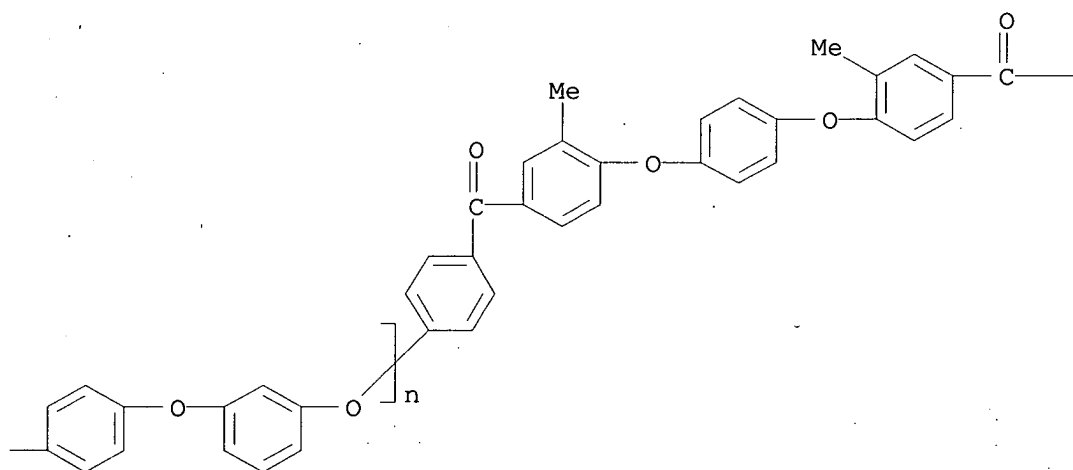
RN 216320-98-8 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylenecarbonyl(3-methyl-1,4-phenylene)oxy-  
1,4-phenyleneoxy(2-methyl-1,4-phenylene)carbonyl-1,4-phenylene],  
 $\alpha$ -[4-[4-[4-[4-[4-(3-ethynylphenoxy)benzoyl]-2-methylphenoxy]phenoxy]-  
3-methylbenzoyl]phenyl]- $\omega$ -(3-ethynylphenoxy)- (9CI) (CA INDEX NAME)

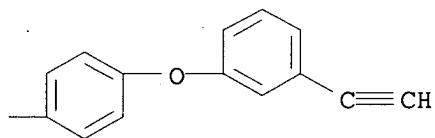
PAGE 1-A



PAGE 1-B



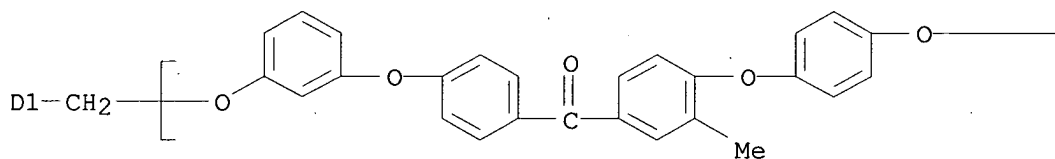
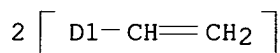
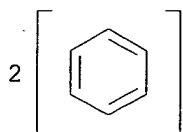
PAGE 1-C



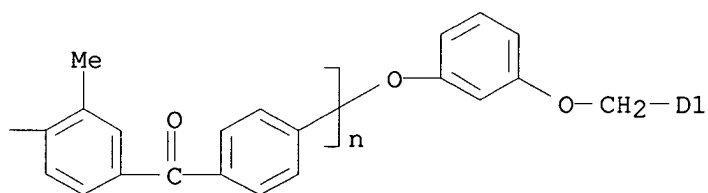


RN 216375-59-6 HCAPLUS  
 CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylenecarbonyl(3-methyl-1,4-phenylene)oxy-  
 1,4-phenyleneoxy(2-methyl-1,4-phenylene)carbonyl-1,4-phenylene],  
 $\alpha$ -[(ethenylphenyl)methyl]- $\omega$ -[3-[(ethenylphenyl)methoxy]phenoxy  
 ]- (9CI) (CA INDEX NAME)

PAGE 1-A

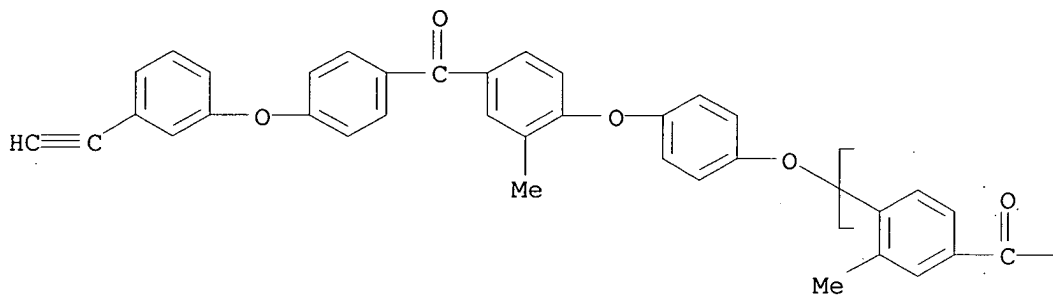


PAGE 1-B

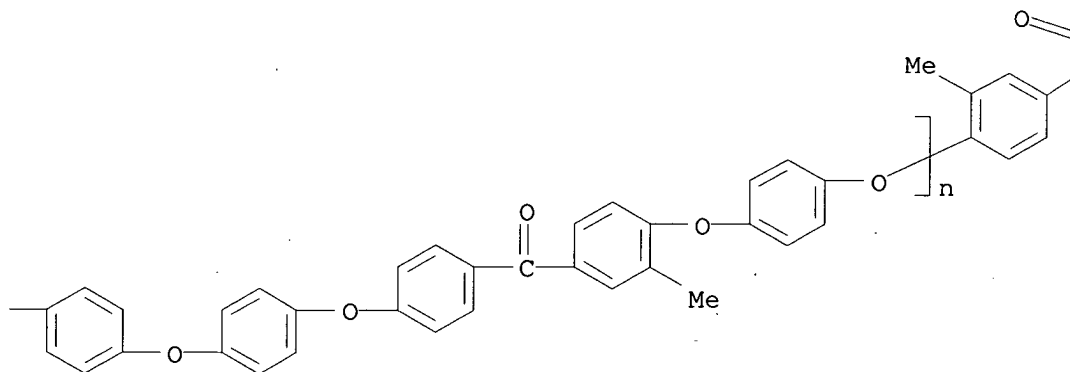


IT 162715-35-7P 162715-40-4DP, 3-ethynylphenoxy-terminated  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (curable aromatic resin composition for elec. resistance element)  
 RN 162715-35-7 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy(2-methyl-1,4-phenylene)carbonyl-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl(3-methyl-1,4-phenylene)],  
 $\alpha$ -[4-[4-(3-ethynylphenoxy)benzoyl]-2-methylphenyl]- $\omega$ -[4-[4-(3-ethynylphenoxy)benzoyl]-2-methylphenoxy]phenoxy]- (9CI) (CA INDEX NAME)

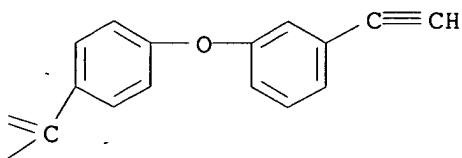
PAGE 1-A



PAGE 1-B



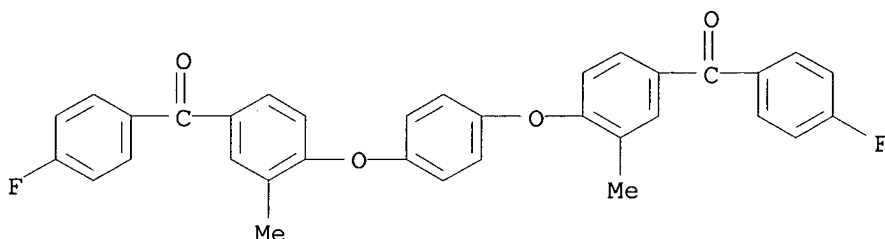
PAGE 1-C



RN 162715-40-4 HCAPLUS  
 CN Methanone, [1,4-phenylenebis[oxy(3-methyl-4,1-phenylene)]]bis[(4-fluorophenyl)-, polymer with 1,4-benzenediol (9CI) (CA INDEX NAME)

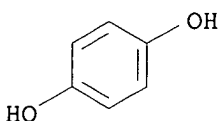
CM 1

CRN 162715-39-1  
 CMF C34 H24 F2 O4



CM 2

CRN 123-31-9  
 CMF C6 H6 O2



L50 ANSWER 6 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:742434 HCAPLUS  
 DN 128:3957  
 TI Synthesis of block copolymer of poly(aryl ether ketone)-poly(aryl ester)  
 AU Zhang, Shanju; Zheng, Yubin; Wu, Zhongwen  
 CS Department Chemistry, Jilin University, Changchun, 130023, Peop. Rep. China  
 SO Jilin Daxue Ziran Kexue Xuebao (1997), (2), 106-108  
 CODEN: CLTTDI; ISSN: 0529-0279  
 PB "Jilin Daxue Ziran Kexue Xuebao" Bianjibu  
 DT Journal  
 LA Chinese  
 AB A series of block copolymers of poly(aryl ether

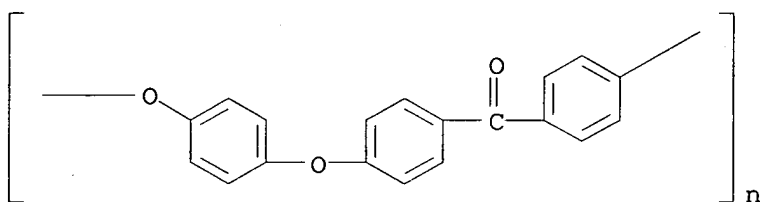
- ketone)-poly(aryl ester) were synthesized by polycondensation of the two **oligomers**. The results of all synthesized block copolymers measured by optical polarizing microscopy showed that they all exhibited birefringence above their melting temperature
- CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 37
- IT Polyesters, preparation  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(aromatic; in synthesis of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Polymerization  
(block; synthesis and birefringence of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-polyether-, aromatic; synthesis and birefringence of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyester-polyketone-, aromatic; synthesis and birefringence of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Polyketones  
Polyketones  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(polyether-, aromatic; in synthesis of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Polyesters, preparation  
Polyesters, preparation  
Polyesters, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, aromatic; synthesis and birefringence of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Polyethers, preparation  
Polyethers, preparation  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(polyketone-, aromatic; in synthesis of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT Birefringence  
(synthesis and birefringence of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))
- IT 25718-32-5P 26637-45-6P, Hydroquinone-terephthaloyl dichloride copolymer, sru 28931-97-7P 29658-26-2P **31694-16-3P**  
52871-58-6P, Hydroquinone-terephthaloyl dichloride copolymer **60015-03-4P** 105451-78-3P 105777-36-4P 120016-11-7P 120016-14-0P  
RL: RCT (Reactant); **SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)**  
(in synthesis of block copolymer of poly(**aryl ether** ketone)-poly(aryl ester))

IT 198905-49-6P 198905-50-9P 198905-51-0P 198905-52-1P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and birefringence of block copolymer of poly(aryl  
 ether ketone)-poly(aryl ester))

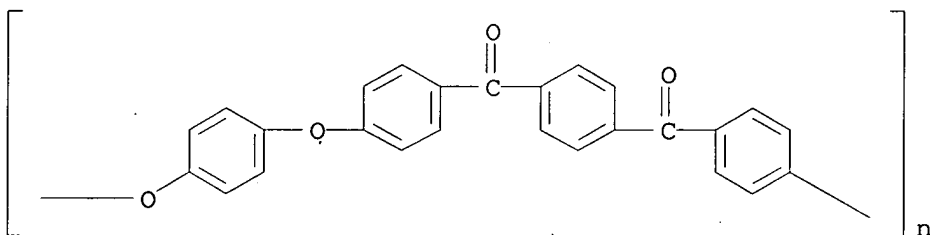
IT 56466-63-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (synthesis and birefringence of block copolymer of poly(aryl  
 ether ketone)-poly(aryl ester))

IT 31694-16-3P 60015-03-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (in synthesis of block copolymer of poly(aryl ether  
 ketone)-poly(aryl ester))

RN 31694-16-3 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA  
 INDEX NAME)



RN 60015-03-4 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)

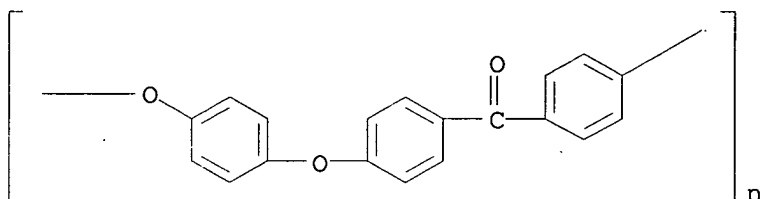


L50 ANSWER 7 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:726470 HCAPLUS  
 DN 127:332127  
 TI Synthesis and properties of a new kind of high performance composite resin  
 matrix-poly(aryl ether ketones)/poly(ether sulfone)  
 block copolymers  
 AU Wang, Junzuo; Xun, Xiumei; Cao, Junkui; Su, Wencheng; Chen, Yan; Wu,  
 Zhongwen  
 CS Department of Chemistry, Jilin University, Changchun, 130023, Peop. Rep.  
 China  
 SO High Technology Letters (1997), 3(1), 85-91  
 CODEN: HTLEFC; ISSN: 1006-6748  
 PB Editorial Department of High Technology Letters  
 DT Journal  
 LA English

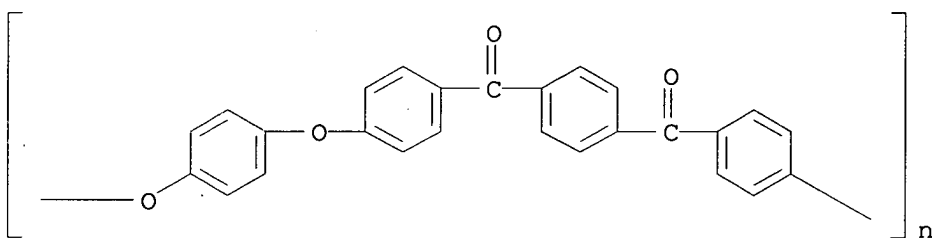
- AB High-performance composite resin matrix PEEK/poly(ether sulfone) (PES), PEEKK/PES block copolymers were prepared from the corresponding **oligomers** via a nucleophilic aromatic substitution reaction. The different properties of the copolymers are investigated by differential scanning calorimetry, thermogravimetric anal. and dynamic mech. anal. The relationship between the glass transition temperature,  $T_g$ , and the compns. of the copolymers approx. follows the formula  $1/T_g = W_1 + W_2/tg_2$  for PEEKK/PES block copolymers, and  $T_g = T_{g1}W_1 + T_{g2}W_2$  for PEEK/PES block copolymers. The PES content and the segment length of the copolymers have a significant influence on their m.p. The introduction of the PES segment into the mol. main chain increases the glass transition temperature of poly(**aryl ether** ketones) and decreases their melting temperature, that is to say it decreases their melting processing temperature. The block copolymers keep the high temperature stability and solvent resistance of poly(**aryl ether** ketones). They are expected to be a new kind of high-performance composite resin matrix.
- CC 37-3 (Plastics Manufacture and Processing)
- IT Viscoelasticity  
(dynamic; of high-performance poly(**aryl ether** ketone)/poly(ether sulfone) block copolymers)
- IT Glass transition temperature  
Thermal properties  
(of high-performance poly(**aryl ether** ketone)/poly(ether sulfone) block copolymers)
- IT Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, aromatic, block; synthesis and properties of high-performance poly(**aryl ether** ketone)/poly(ether sulfone) block copolymers)
- IT Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, aromatic, block; synthesis and properties of high-performance poly(**aryl ether** ketone)/poly(ether sulfone) block copolymers)
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-polysulfone-, aromatic, block; synthesis and properties of high-performance poly(**aryl ether** ketone)/poly(ether sulfone) block copolymers)
- IT 25608-63-3P, 4,4'-Dichlorodiphenyl sulfone-4,4'-dihydroxydiphenyl sulfone copolymer 25667-42-9P, 4,4'-Dichlorodiphenyl sulfone-4,4'-dihydroxydiphenyl sulfone copolymer, SRU 29658-26-2P, 4,4'-Difluorobenzophenone-hydroquinone copolymer **31694-16-3P**, 4,4'-Difluorobenzophenone-hydroquinone copolymer, SRU **60015-03-4P**, 1,4-Bis(4'-fluorobenzoyl)benzene-hydroquinone copolymer, SRU 105451-78-3P, 1,4-Bis(4'-fluorobenzoyl)benzene-hydroquinone copolymer  
RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(**oligomeric**; preparation and nucleophilic substitution reaction in synthesis of high-performance poly(**aryl ether** ketone)/poly(ether sulfone) block copolymers)
- IT 111433-65-9P, 1,4-Bis(4'-fluorobenzoyl)benzene-4,4'-dichlorodiphenyl sulfone-4,4'-dihydroxydiphenyl sulfone-hydroquinone block copolymer

124701-33-3P, 4,4'-Dichlorodiphenyl sulfone-4,4'-dihydroxydiphenyl sulfone-4,4'-difluorobenzophenone-hydroquinone block copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis and properties of high-performance poly(aryl ether ketone)/poly(ether sulfone) block copolymers)

IT 31694-16-3P, 4,4'-Difluorobenzophenone-hydroquinone copolymer, SRU  
 60015-03-4P, 1,4-Bis(4'-fluorobenzoyl)benzene-hydroquinone copolymer, SRU  
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process) (oligomeric; preparation and nucleophilic substitution reaction in synthesis of high-performance poly(aryl ether ketone)/poly(ether sulfone) block copolymers)  
 RN 31694-16-3 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



RN 60015-03-4 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 8 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:429480 HCAPLUS  
 DN 127:51524  
 TI Aromatic polyether-polyketones with reactive ethynyl end groups for crosslinking and their preparation  
 IN Taguchi, Yoshihiro; Atsushi, Nakamura; Kobayashi, Shiro; Uyama, Hiroshi  
 PA Alps Electric Co., Ltd., Japan; Kobayashi, Shiro  
 SO Ger. Offen., 14 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 19645996	A1	19970515	DE 1996-19645996	19961107
	JP 09188757	A2	19970722	JP 1996-237088	19960906
	US 5864050	A	19990126	US 1996-743997	19961104
PRAI	JP 1995-289026	A	19951107		
	JP 1996-237088	A	19960906		

AB The crosslinkable resins have repeating units consisting of 3-4 unsubstituted phenylene rings joined by O or CO links, both types of link being present, and end groups capable of forming a crosslinked structure, the end groups preferably being acetylenic. Thus, 4,4'-dihydroxybenzophenone was polymerized with m-C<sub>6</sub>H<sub>4</sub>Br<sub>2</sub> in the presence of KOH and Cu<sub>2</sub>O to give a Br-terminated polyether-polyketone, which was treated with HC.tplbond.CCMe<sub>2</sub>OH in the presence of (Ph<sub>3</sub>P)<sub>2</sub>PdCl<sub>2</sub> and CuI. The acetylene-terminated product was soluble in CHCl<sub>3</sub> and CH<sub>2</sub>Cl<sub>2</sub> for mol.

weight

≤21,000 and in MeOBz for mol. weight. ≤2800.

IC ICM C08G065-40

ICS C08G065-48; C07C049-84; C07C045-68

CC 37-3 (Plastics Manufacture and Processing)

IT 82200-47-3P, 4,4'-Bis(3-ethynylphenoxy)benzophenone 110122-17-3P

133150-78-4DP, 1,3-Dibromobenzene-4,4'-dihydroxybenzophenone copolymer, ethynyl-terminated 133150-99-9P 190968-68-4P 190968-76-4P

RL: IMF (Industrial manufacture); PREP (Preparation)

(crosslinkable aromatic polyether-polyketones with ethynyl end groups)

IT 133150-99-9P

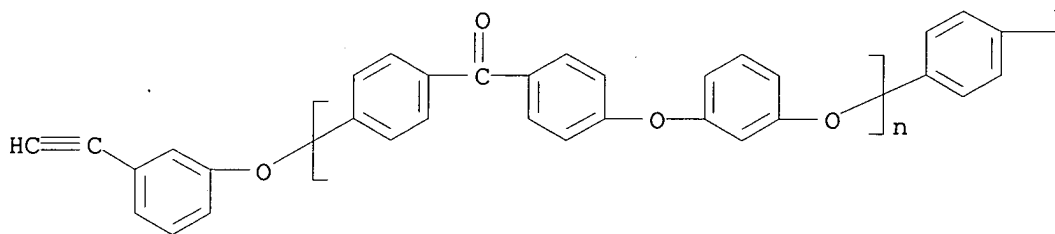
RL: IMF (Industrial manufacture); PREP (Preparation)

(crosslinkable aromatic polyether-polyketones with ethynyl end groups)

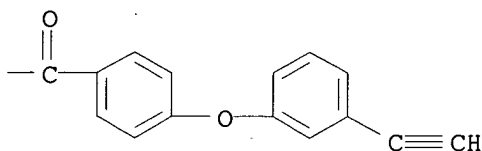
RN 133150-99-9 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene), α-[4-[4-(3-ethynylphenoxy)benzoyl]phenyl]-ω-(3-ethynylphenoxy)-(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L50 ANSWER 9 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:378899 HCAPLUS  
 DN 127:81843

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505



- TI Synthesis and properties of the block copolymers of poly(ether ether ketone) and the poly(**aryl ether** sulfone) containing biphenylene moiety
- AU Shibata, Mitsuhiro; Cao, Junkui; Yosomiya, Ryutoku
- CS Dep. of Industrial Chemistry, Chiba Institute of Technology, Narashino, 275, Japan
- SO Polymer (1997), 38(12), 3103-3108  
CODEN: POLMAG; ISSN: 0032-3861
- PB Elsevier
- DT Journal
- LA English
- AB The block copolymers of poly(ether ether ketone) (PEEK) and poly(**aryl ether** sulfone) containing biphenylene moiety (PEBS) were synthesized by a condensation reaction of fluorine-terminated PEEK **oligomers** and hydroxy-terminated PEBS **oligomers**. The content of PEBS in the copolymers was varied from 10 to 37 wt%, and the effect of the compositional variation on the properties was investigated. Microphase separation was not observed and the copolymer was a homogeneous system having good compatibility. The crystal structure of the copolymers is rhombic, equal to PEEK. Although the degree of crystallinity of the copolymers decreased with the increase of PEBS content, the glass transition temperature (Tg) rose greatly, and superior heat resistance and good mech. properties at high temperature were obtained. Analyses of the isothermal crystallization kinetics of the copolymers provided an Avrami's exponent (n) of 2.0.
- CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36
- IT Polymer morphology  
(crystalline, rhombic; of the block copolymers of poly(ether ether ketone) and biphenylene-containing poly(**aryl ether** sulfone))
- IT Crystallinity  
Crystallization kinetics  
Glass transition temperature  
Melting point  
(of the block copolymers of poly(ether ether ketone) and biphenylene-containing poly(**aryl ether** sulfone))
- IT Polysulfones, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, block; preparation and properties of the block copolymers of poly(ether ether ketone) and biphenylene-containing poly(**aryl ether** sulfone))
- IT Polyketones  
Polyketones  
Polyketones  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, block; preparation and properties of the block copolymers of poly(ether ether ketone) and biphenylene-containing poly(**aryl ether** sulfone))
- IT Polyethers, preparation  
Polyethers, preparation  
Polyethers, preparation  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-polysulfone-, block; preparation and properties of the block copolymers of poly(ether ether ketone) and biphenylene-containing poly(**aryl ether** sulfone))
- IT 29658-26-2P, 4,4'-Difluorobenzophenone-hydroquinone copolymer

**31694-16-3P**, 4,4'-Difluorobenzophenone-hydroquinone copolymer, sru  
 52661-09-3P, 4,4'-Bis(4-chlorophenylsulfonyl)biphenyl-4,4'-  
 dihydroxydiphenylsulfone copolymer 52661-12-8P, 4,4'-Bis(4-  
 chlorophenylsulfonyl)biphenyl-4,4'-dihydroxydiphenylsulfone copolymer, sru  
 RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP**  
**(Preparation)**; RACT (Reactant or reagent)

(**oligomeric**; preparation of block copolymers of poly(ether ether  
 ketone) and biphenylene-containing poly(**aryl ether**  
 sulfone))

IT 160998-18-5P, 4,4'-Bis(4-chlorophenylsulfonyl)biphenyl-4,4'-  
 Difluorobenzophenone-4,4'-dihydroxydiphenylsulfone-hydroquinone block  
 copolymer

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and properties of the block copolymers of poly(ether ether  
 ketone) and biphenylene-containing poly(**aryl ether**  
 sulfone))

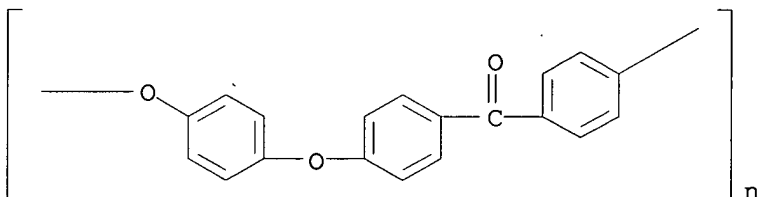
IT **31694-16-3P**, 4,4'-Difluorobenzophenone-hydroquinone copolymer, sru

RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP**  
**(Preparation)**; RACT (Reactant or reagent)

(**oligomeric**; preparation of block copolymers of poly(ether ether  
 ketone) and biphenylene-containing poly(**aryl ether**  
 sulfone))

RN 31694-16-3 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA  
 INDEX NAME)



RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 10 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:12702 HCAPLUS

DN 126:47707

TI Manufacture of poly(cyanoaryl ethers) with high purity

IN Shinozaki, Tatsuo; Nishitani, Hiroshi

PA Idemitsu Petrochemical Co, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08259689	A2	19961008	JP 1995-67287	19950327
PRAI	JP 1995-67287		19950327		

AB The title polymers are manufactured by polycondensation of  
 dihalogenobenzonitriles with dihydric phenols in the presence of alkali  
 metal salts and solvents and removing salts from the reaction solns.  
 (polymer concentration 50-200 g/L, temperature 100-210°) by filtration, static  
 separation, or centrifugation. Thus, 16.5 g resorcinol and 25.7 g

2,6-dichlorobenzonitrile were polymerized in N-methyl-2-pyrrolidone (NMP) in the presence of Na<sub>2</sub>CO<sub>3</sub> at 200° for 75 min, further polymerized with addition of 2,6-difluorobenzonitrile for 105 min, and salts were removed from the solution by static separation to give 93.5% polymer having reducing viscosity (60°, 0.2 g/dL, p-chlorophenol) 1.28 dL/g, Na content 8 ppm, **oligomer** content 1.7%, NMP content 0.4%, and bulk d. 0.15 g/mL.

IC ICM C08G065-40  
ICS C08G065-40

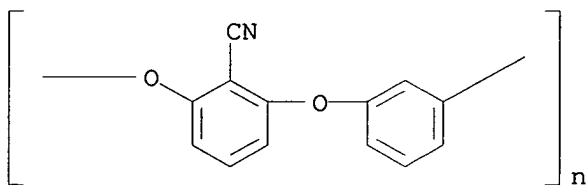
CC 35-5 (Chemistry of Synthetic High Polymers)

IT **111867-27-7P 113527-17-6P**, 2,6-Dichlorobenzonitrile-2,6-difluorobenzonitrile-resorcinol copolymer  
RL: **IMF (Industrial manufacture)**; PUR (Purification or recovery); **PREP (Preparation)**  
(preparation and purification of poly(cyanoaryl ethers))

IT **111867-27-7P 113527-17-6P**, 2,6-Dichlorobenzonitrile-2,6-difluorobenzonitrile-resorcinol copolymer  
RL: **IMF (Industrial manufacture)**; PUR (Purification or recovery); **PREP (Preparation)**  
(preparation and purification of poly(cyanoaryl ethers))

RN 111867-27-7 HCAPLUS

CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)



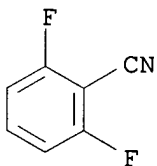
RN 113527-17-6 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol and 2,6-difluorobenzonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 1897-52-5

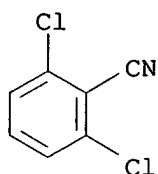
CMF C7 H3 F2 N



CM 2

CRN 1194-65-6

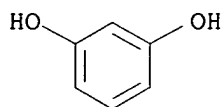
CMF C7 H3 Cl2 N



CM 3

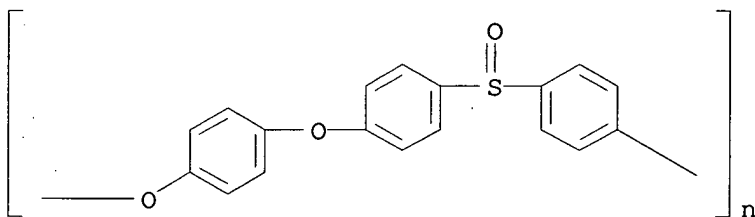
CRN 108-46-3

CMF C6 H6 O2

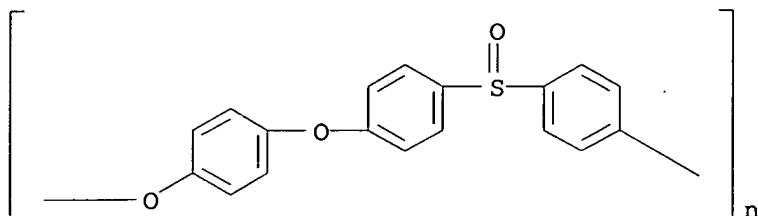


L50 ANSWER 11 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:12561 HCAPLUS  
 DN 126:47635  
 TI Macrocyclic Arylene Ether Ether Sulfide **Oligomers**: New Intermediates for the Synthesis of High-Performance Poly(arylene ether ether sulfide)s  
 AU Wang, Yi-Feng; Hay, Allan S.  
 CS Department of Chemistry, McGill University, Montreal, QC, H3A 2K6, Can.  
 SO Macromolecules (1997), 30(2), 182-193  
 CODEN: MAMOBX; ISSN: 0024-9297  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB A convenient and efficient synthetic route to a new class of macrocyclic **aryl ether ether sulfide oligomers** is described. This new class of cyclic **oligomers** is prepared, in excellent yield, by quant. chemical reduction of macrocyclic **aryl ether ether sulfoxide oligomers** with oxalyl chloride and tetrabutylammonium iodide. The cyclic sulfoxide **oligomeric** precursors are prepared in high yield by an aromatic nucleophilic substitution reaction from bis(4-fluorophenyl) sulfoxide and potassium salts of bisphenols under high-dilution conditions. These novel cyclic **oligomers** were characterized by a combination of GPC, NMR, matrix-assisted laser desorption/ionization time-of-flight mass spectroscopy (MALDI-TOF-MS), and thermal analyses. The cyclic nature of these **oligomers** was confirmed by NMR and MALDI-TOF-MS analyses. The cyclic sulfoxide **oligomers** are amorphous with Tgs varying from 140 to 199°C. Upon chemical reduction, the corresponding sulfide **oligomers** are highly crystalline with Tm varying from 237 to 350°C. Ring-opening polymerization of the cyclic **aryl ether ether sulfide oligomers** to corresponding high-mol.-weight linear polymers can be effected in the melt phase with the addition of a catalytic amount of 2,2'-dithiobis(benzothiazole) disulfide.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 IT Polythioethers  
 Polythioethers

- RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, **oligomeric**, cyclic; preparation and properties of  
 macrocyclic polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- IT Polyethers, preparation  
 Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polythioether-, **oligomeric**, cyclic; preparation and properties of  
 macrocyclic polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- IT 152931-95-8P **152931-96-9P** 152931-97-0P 152931-98-1P  
 184868-61-9P 184868-62-0P  
 RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP**  
**(Preparation)**; RACT (Reactant or reagent)  
 (intermediate, **oligomeric**, cyclic; preparation and properties of  
 macrocyclic polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- IT 184868-59-5P 184868-60-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (intermediate, **oligomeric**; preparation and properties of  
 macrocyclic polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- IT 152931-95-8DP, reduced **152931-96-9DP**, reduced 152931-97-0DP,  
 reduced 152931-98-1DP, reduced 184868-61-9DP, reduced 184868-62-0DP,  
 reduced  
 RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
 (**oligomeric**, cyclic; preparation and properties of macrocyclic  
 polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- IT **152931-96-9P**  
 RL: RCT (Reactant); **SPN (Synthetic preparation)**; **PREP**  
**(Preparation)**; RACT (Reactant or reagent)  
 (intermediate, **oligomeric**, cyclic; preparation and properties of  
 macrocyclic polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- RN 152931-96-9 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenesulfinyl-1,4-phenylene) (9CI) (CA  
 INDEX NAME)



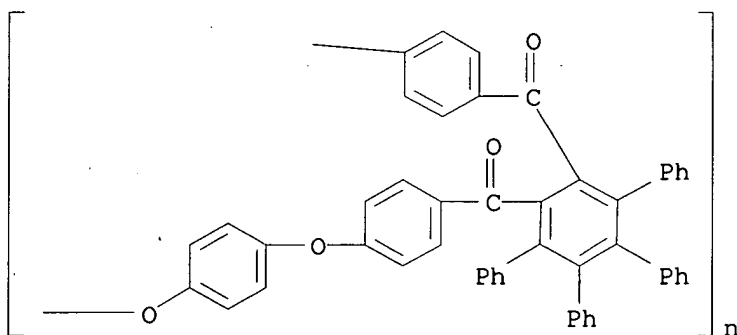
- IT **152931-96-9DP**, reduced  
 RL: **SPN (Synthetic preparation)**; **PREP (Preparation)**  
 (**oligomeric**, cyclic; preparation and properties of macrocyclic  
 polyether-polythioethers as intermediates for synthesis of  
 high-mol.-weight poly(arylene ether ether sulfide)s)
- RN 152931-96-9 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenesulfinyl-1,4-phenylene) (9CI) (CA  
 INDEX NAME)



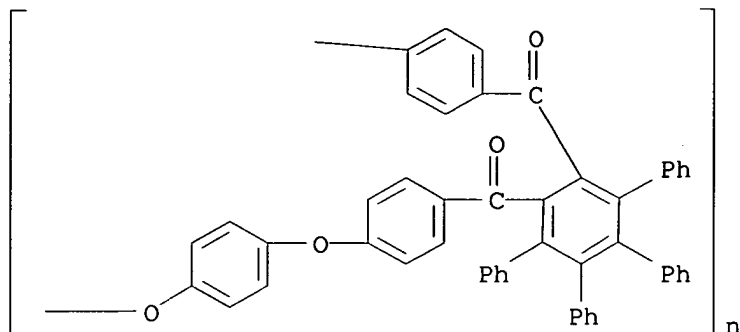
RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L50 ANSWER 12 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1996:195130 HCAPLUS  
DN 124:261878  
TI Synthesis of Macrocyclic **Aryl Ethers** Containing the  
Tetraphenylbenzene Moiety  
AU Ding, Yong; Hay, Allan S.  
CS Department of Chemistry, McGill University, Montreal, QC, H3A 2K6, Can.  
SO Macromolecules (1996), 29(9), 3090-5  
CODEN: MAMOBX; ISSN: 0024-9297  
PB American Chemical Society  
DT Journal  
LA English  
AB Cyclic **aryl ether ketone oligomers** containing  
the 1,2-dibenzoyl-3,4,5,6-tetraphenylbenzene moiety were synthesized in  
high yield by reaction of 1,2-bis(4-fluorobenzoyl)-3,4,5,6-  
tetraphenylbenzene with bisphenols in DMF in the presence of potassium  
carbonate. The diketone monomer had low solubility in DMF, and high dilution  
conditions were obtained by adding the solid reactants in portions during  
the course of the reaction. The cyclic ether ketone **oligomers**  
were also transformed into cyclic ether phthalazines by reaction with  
hydrazine. The cyclic products formed were crystalline and have lower Tgs than  
their amorphous linear counterparts.  
CC 35-5 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 28  
IT Cardo polymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(cyclic; preparation of **oligomeric** cyclic polyether-polyketones  
containing tetraphenylbenzene moiety)  
IT Polyketones  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, fluorine-containing, cyclic; preparation of **oligomeric**  
cyclic polyether-polyketones containing tetraphenylbenzene moiety)  
IT Fluoropolymers  
Polysulfones, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polyketone-, cyclic; preparation of **oligomeric** cyclic  
polyether-polyketones containing tetraphenylbenzene moiety)  
IT Polyketones  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-polysulfone-, cyclic; preparation of **oligomeric** cyclic  
polyether-polyketones containing tetraphenylbenzene moiety)  
IT Polyethers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, fluorine-containing, cyclic; preparation of **oligomeric**

- cyclic polyether-polyketones containing tetraphenylbenzene moiety)
- IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyketone-polysulfone-, cyclic; preparation of **oligomeric** cyclic polyether-polyketones containing tetraphenylbenzene moiety)
- IT 132980-75-7DP, reaction products with hydrazine 132980-80-4DP, reaction products with hydrazine  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (cyclic; preparation of macrocyclic **aryl ethers** containing a tetraphenylbenzene moiety)
- IT 302-01-2DP, Hydrazine, reaction products with polyether-polyketones 132980-75-7P 132980-80-4P 138181-23-4DP, reaction products with hydrazine 138181-23-4P **138181-24-5DP**, reaction products with hydrazine **138181-24-5P** 138181-31-4DP, reaction products with hydrazine 138181-31-4P 138181-32-5DP, reaction products with hydrazine 138181-32-5P 138181-36-9DP, reaction products with hydrazine 138181-36-9P 138181-37-0DP, reaction products with hydrazine 138181-37-0P 138181-43-8DP, reaction products with hydrazine 138181-43-8P 138181-44-9DP, reaction products with hydrazine 138181-44-9P 167632-51-1P 170468-60-7P 175660-29-4DP, reaction products with hydrazine 175660-29-4P 175660-30-7DP, reaction products with hydrazine 175660-30-7P 175660-31-8DP, reaction products with hydrazine 175660-31-8P 175660-32-9DP, reaction products with hydrazine 175660-32-9P 175660-33-0DP, reaction products with hydrazine 175660-33-0P 175660-34-1DP, reaction products with hydrazine 175660-34-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (cyclic; preparation of **oligomeric** cyclic polyether-polyketones containing tetraphenylbenzene moiety)
- IT **138181-24-5DP**, reaction products with hydrazine **138181-24-5P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (cyclic; preparation of **oligomeric** cyclic polyether-polyketones containing tetraphenylbenzene moiety)
- RN 138181-24-5 HCAPLUS
- CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl(5',6'-diphenyl[1,1':2',1''-terphenyl]-3',4'-diyl)carbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

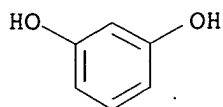


- RN 138181-24-5 HCAPLUS
- CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl(5',6'-diphenyl[1,1':2',1''-terphenyl]-3',4'-diyl)carbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)



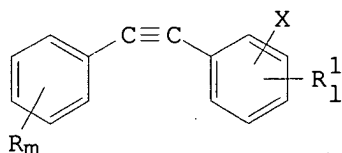
L50 ANSWER 13 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1994:509793 HCAPLUS  
 DN 121:109793  
 TI Polymerization of m-dihydroxybenzene in concentrated perchloric acid  
 AU Veselinovic, D. S.; Grujic, S. A.; Obradovic, M. V.; Kroschviz, H.  
 CS Fac. Phys. Chem., Belgrade, YU-11001, Yugoslavia  
 SO Journal of the Serbian Chemical Society (1993), 58(6), 411-18  
 CODEN: JSCSEN; ISSN: 0352-5139  
 DT Journal  
 LA English  
 AB M-Dihydroxybenzene (resorcinol) forms polymeric compds. in 70% aqueous HClO<sub>4</sub>. These polymers are insol. in HClO<sub>4</sub> and their formation may take several months. Due to different ds.p., several products are identified by chromatog. methods in resorcinol systems. On the basis of 1H-NMR, UV, IR, and mass-spectrometry an **oligomeric** polyoxyphenylene with possible branching is proposed as the main product. The basic chain can contain 3-7 units.  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, **oligomers**, preparation of, from resorcinol in perchloric acid)  
 IT Polymerization catalysts  
 (**oligomerization**, perchloric acid, for resorcinol)  
 IT 7601-90-3, Perchloric acid, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for **oligomerization** of resorcinol)  
 IT **26982-54-7P**, Resorcinol homopolymer  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (**oligomers**, preparation of, in perchloric acid)  
 IT **26982-54-7P**, Resorcinol homopolymer  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (**oligomers**, preparation of, in perchloric acid)  
 RN 26982-54-7 HCAPLUS  
 CN 1,3-Benzenediol, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 108-46-3  
 CMF C6 H6 O2





L50 ANSWER 14 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:103616 HCAPLUS  
 DN 118:103616  
 TI Polyimides end-capped with diaryl substituted acetylene  
 IN Paul, Charles W.; Schultz, Rose A.; Fenelli, Steven P.  
 PA National Starch and Chemical Investment Holding Corp., USA  
 SO U.S., 16 pp. Cont.-in-part of U.S. Ser. No. 482,362, abandoned.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5138028	A	19920811	US 1992-823508	19920121
	US 5138028	B1	19961224		
	CA 2035816	AA	19910821	CA 1991-2035816	19910206
	CA 2035816	C	19960625		
PRAI	US 1990-482362	B2	19900220		
GI					



I

AB An oligomeric polyamic acid, polyamic acid ester, polyisoimide, and/or polyimide is end capped with diarylacetylene [I; m = 0-5; l = 0-4; R, R1 = halogen, C1-4 alkyl, alkoxy, aryloxy, haloaryl, haloalkyl, haloacyl, aryl, acyl; X = NH2, CHO, NCO, anhydride, CO2H, ester, acyl halide; provided m or l ≠ 0 when the backbone is composed of 2,2-bis(3,4-dicarboxyphenyl) hexafluoropropane dianhydride and 1,3-bis(3-aminophenoxy)benzene and X = NH2; the glass temperature >135° after imidation, but prior to cure of the I end caps]. Thus, 0.1 mol 3,3',4,4'-biphenyltetracarboxylic dianhydride and 0.05 mol 1,4-phenylenediamine in N-methylpyrrolidone (II) were heated at 45° for 1 h, followed by addition of 0.1 mol 3-(3-phenylethynylphenoxy)aniline in II with stirring for 1 h to give an amic acid oligomer with acetylene terminal groups having inherent viscosity (0.5 g/dL in II at 25°) 0.17 dL/g.

IC ICM C08G069-26  
 ICS C08G008-02; C08G075-00; C08F022-40

NCL 528353000

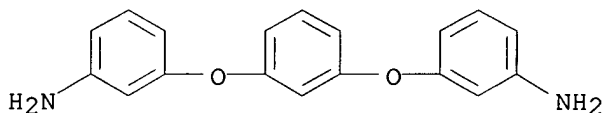
CC 37-3 (Plastics Manufacture and Processing)

IT **7681-65-4, Cuprous iodide**  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts containing, for reaction of bromonitrobenzene with

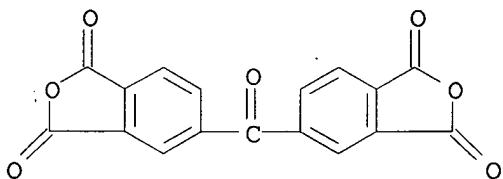
phenylacetylene)  
 IT 10526-07-5DP, 1,3-Bis(3-aminophenoxy)benzene, polyamic derivs., polysiloxane- 25736-02-1DP, 4,4'-Oxydianiline-4,4'-oxydiphthalic dianhydride copolymer, aryl acetylene-terminated 28155-61-5DP, aryl acetylene-terminated 29319-22-0DP, 3,3',4,4'-Biphenyltetracarboxylic dianhydride-1,4-phenylenediamine copolymer, aryl acetylene-terminated 40921-63-9DP, aryl acetylene-terminated **54053-19-9DP**, aryl acetylene-terminated 72356-25-3DP, aryl acetylene-terminated 101505-27-5DP, Benzophenone tetracarboxylic dianhydride-bisaniline P copolymer, aryl acetylene-terminated 119380-81-3DP, aryl acetylene-terminated 119380-82-4DP, aryl acetylene-terminated  
 RL: **PREP (Preparation)**  
 (oligomeric, preparation and ring closure of)  
 IT **7681-65-4, Cuprous iodide**  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts containing, for reaction of bromonitrobenzene with phenylacetylene)  
 RN 7681-65-4 HCAPLUS  
 CN Copper iodide (CuI) (8CI, 9CI) (CA INDEX NAME)

Cu-I

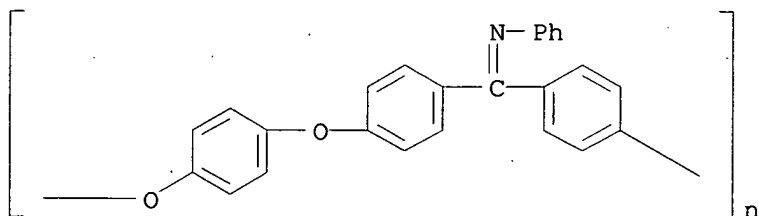
IT **54053-19-9DP**, aryl acetylene-terminated  
 RL: **PREP (Preparation)**  
 (oligomeric, preparation and ring closure of)  
 RN 54053-19-9 HCAPLUS  
 CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with 3,3'-[1,3-phenylenebis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 10526-07-5  
 CMF C18 H16 N2 O2



CM 2  
 CRN 2421-28-5  
 CMF C17 H6 O7

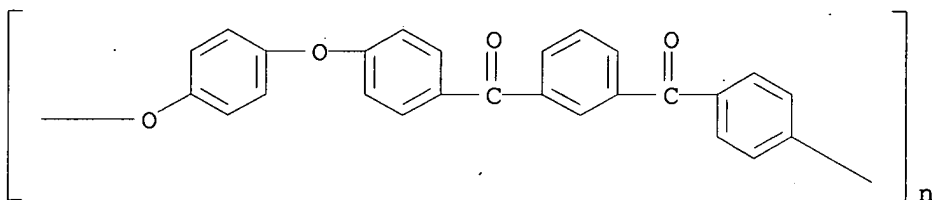


L50 ANSWER 15 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:102684 HCAPLUS  
 DN 118:102684  
 TI Imide-**aryl ether** ketone block copolymers  
 AU Hedrick, J. L.; Volksen, W.; Mohanty, D. K.  
 CS Almaden Res. Cent., IBM Res. Div., San Jose, CA, 95120-6099, USA  
 SO Polyimides Other High-Temp. Polym., Proc. Eur. Tech. Symp., 2nd (1991),  
 83-92. Editor(s): Abadie, Marc J. M.; Sillion, Bernard. Publisher:  
 Elsevier, Amsterdam, Neth.  
 CODEN: 57QVAJ  
 DT Conference  
 LA English  
 AB Title copolymers were prepared via soluble **aryl ether**  
 ketimine **oligomers** which were subsequently hydrolyzed to the  
**aryl ether** ether ketone form. Solns. of the copolymers  
 were cast and cured to effect imidization to produce clear films. The  
 copolymers display good thermal stability and decomposition temps. in excess of  
 450°. Multiphase morphologies were observed irresp. of the co-block  
 type, block length, or composition  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (aromatic, ketimine-containing, **oligomeric**, preparation and polymerization  
 of,  
 with aminophenol, di-Et bis(chloroformyl)benzenedicarboxylate and  
 oxydianiline)  
 IT 109997-75-3P, N-[Bis(4-fluorophenyl)methylene]benzenamine-hydroquinone  
 copolymer **110018-28-5P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (**oligomeric**, preparation and polymerization of, with aminophenol, di-Et  
 bis(chloroformyl)benzenedicarboxylate and oxydianiline)  
 IT **110018-28-5P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (**oligomeric**, preparation and polymerization of, with aminophenol, di-Et  
 bis(chloroformyl)benzenedicarboxylate and oxydianiline)  
 RN 110018-28-5 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(phenylcarbonimidoyl)-1,4-  
 phenylene] (9CI) (CA INDEX NAME)



L50 ANSWER 16 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1993:102580 HCAPLUS  
 DN 118:102580  
 TI Poly(**aryl ether** ketone) synthesis via competing SNAR  
 and SRN1 reactions. 1. Polymers derived from 1,3-bis(p-  
 chlorobenzoyl)benzene and 1,3-bis(p-fluorobenzoyl)benzene with  
 hydroquinone and 4,4'-isopropylidenediphenol  
 AU Mani, R. S.; Zimmerman, B.; Bhatnagar, A.; Mohanty, D. K.

CS Dep. Chem., Cent. Michigan Univ., Mt. Pleasant, MI, 48859, USA  
 SO Polymer (1993), 34(1), 171-81  
 CODEN: POLMAG; ISSN: 0032-3861  
 DT Journal  
 LA English  
 AB Poly(**aryl ether** ketone) was prepared by the reaction of 1,3-(bischlorobenzoyl)benzene or the corresponding fluoro analog with bisphenoxides derived from either hydroquinone (I) or bisphenol A (II). With the stronger nucleophile, obtained from II and either of the dihalides, high-mol.-weight polymers were formed exclusively via a nucleophilic aromatic substitution (SNAR) reaction. A similar reaction gave a high-mol.-weight polymer when the weaker nucleophile, derived from I, was allowed to react with the bisfluoride. However, **oligomeric** products were obtained when the bischloride was treated with this weaker nucleophile. In this case, both SNAR and SRN1 (substitution, radical-nucleophilic, unimol.) mechanisms were operative for the replacement of the Cl atoms. The SRN1 pathway, which was responsible for the formation of **oligomeric** products, could be eliminated by the addition of a suitable radical scavenger. High-mol.-weight poly(**aryl ether** ketone) was then formed via the SNAR mechanism.  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 IT 3770-82-9P 40912-23-0P 146296-20-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as model compds. for **aromatic** poly(**ether** ketone) preparation mechanisms)  
 IT 60015-06-7P 100344-02-3P 100344-94-3P 109521-12-2P  
 125490-21-3P 146288-54-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, nucleophilic substitution reactions in)  
 IT 60015-06-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, nucleophilic substitution reactions in)  
 RN 60015-06-7 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,3-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



L50 ANSWER 17 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:592471 HCAPLUS  
 DN 117:192471  
 TI Imide-**aryl ether** ketone block copolymers  
 AU Hedrick, James L.; Volksen, W.; Mohanty, Dillip K.  
 CS Almaden Res. Cent., IBM Res. Div., San Jose, CA, 95120-6099, USA  
 SO Journal of Polymer Science, Part A: Polymer Chemistry (1992), 30(10), 2085-97  
 CODEN: JPACEC; ISSN: 0887-624X  
 DT Journal  
 LA English  
 AB Imide-**aryl ether** ketone block copolymers were prepared

and their morphol. and thermal and mech. properties investigated. Two **aryl ether** ketone blocks were incorporated; the first was an amorphous block derived from bisphenol A and the second block was a semicryst. poly(**aryl ether** ether ketone) prepared from a soluble and amorphous ketimine precursor. Bis(amino) **aryl ether** ketone and **aryl ether** ketimine **oligomers** were prepared via a nucleophilic aromatic substitution reaction with mol. wts. 6000-121,000. The **oligomers** were co-reacted with 4,4'-oxydianiline and pyromellitic dianhydride di-Et ester diacyl chloride in N-methyl-2-pyrrolidone in the presence of N-methylmorpholine. The copolymer comps., determined by <sup>1</sup>H NMR, or the resulting amic ester-based copolymers ranged from 8 to 50% **aryl ether** ketone or ketimine content. Prior to imide formation, the ketimine moiety of the **aryl ether** ketimine block was hydrolyzed (p-toluenesulfonic acid) to the ketone form producing the **aryl ether** ether ketone block. Solns. of the copolymers were cast and cured to effect imidization, producing clear films with high moduli (.apprx.2200 MPa) and elongations (33-100%). The copolymers displayed good thermal stability with decomposition temps. in excess of 450°. Multiphase morphologies were observed irres. of the block type, block length or composition

CC 35-5 (Chemistry of Synthetic High Polymers)

IT Glass temperature and transition  
(of polyketone- and polyketimine-polyether **oligomers**)

IT Polyethers, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)  
(aromatic, ketimine-containing, **oligomeric**, preparation and characterization and polymerization of, with oxydianiline and pyromellitic di-Et ester diacyl chloride)

IT Polyketones

RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyether-, **oligomeric**, preparation and characterization and polymerization of, with oxydianiline and pyromellitic di-Et ester diacyl chloride)

IT Polyethers, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyketone-, **oligomeric**, preparation and characterization and polymerization of, with oxydianiline and pyromellitic di-Et ester diacyl chloride)

IT 25897-65-8DP, Bisphenol A-4,4'-difluorobenzophenone copolymer, aminophenyl-terminated 109997-75-3DP, N-[Bis(4-fluorophenyl)methylene]benzenamine-hydroquinone copolymer, aminophenyl-terminated 114940-08-8P, Bisphenol A-4,4'-difluorobenzophenone copolymer, sru, aminophenyl-terminated **141343-02-4P**, N-[Bis(4-fluorophenyl)methylene]benzenamine-hydroquinone copolymer, sru, aminophenyl-terminated

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(**oligomeric**, preparation and characterization and block polymerization of, with oxydianiline and pyromellitic di-Et ester diacyl chloride)

IT 129388-96-1P

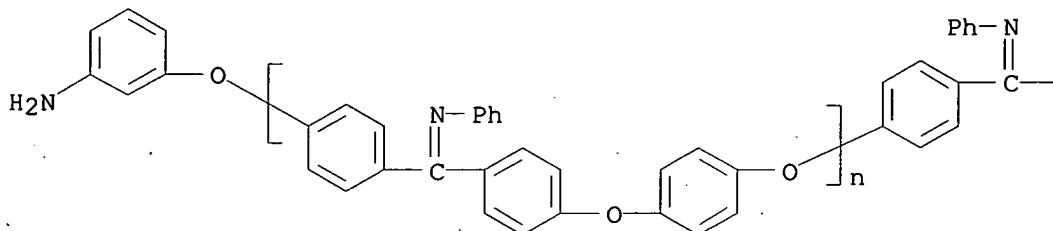
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and polymerization of, with oxydianiline and polyketone- or polyketimine-polyether **oligomers**)

IT **141343-02-4P**, N-[Bis(4-fluorophenyl)methylene]benzenamine-hydroquinone copolymer, sru, aminophenyl-terminated

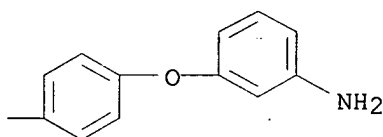
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(**oligomeric**, preparation and characterization and block polymerization of, with oxydianiline and pyromellitic di-Et ester diacyl chloride)

RN 141343-02-4 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(phenylcarbonimidoyl)-1,4-phenylene],  $\alpha$ -[4-[[4-(3-aminophenoxy)phenyl](phenylimino)methyl]phenyl]- $\omega$ -(3-aminophenoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



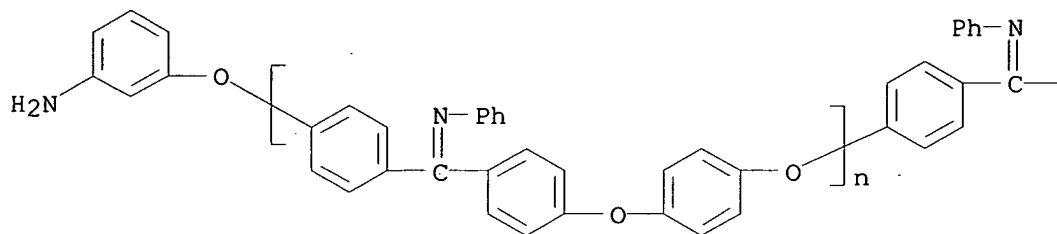
PAGE 1-B



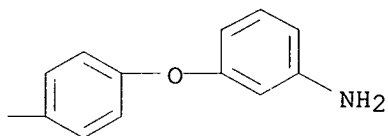
L50 ANSWER 18 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:236600 HCAPLUS  
 DN 116:236600  
 TI Imide-aryl ether ketone block copolymers  
 AU Hedrick, J. L.; Volksen, W.; Mohanty, D. K.  
 CS Almaden Res. Cent., IBM Res. Div., San Jose, CA, 95120-6099, USA  
 SO Materials Research Society Symposium Proceedings (1991), 227(Mater. Sci. High Temp. Polym. Microelectron.), 81-8  
 CODEN: MRSPDH; ISSN: 0272-9172  
 DT Journal  
 LA English  
 AB N-[Bis(4-fluorophenyl)methylene]benzenamine is prepared via Meisenheimer complex, and is then polycondensed with hydroquinone and end-capped 3-aminophenol to form an amine-terminated polyketimine-polyether oligomer. This oligomer is then polycondensed with di-Et 2,5-bis(chlorocarbonyl)benzenedicarboxylate to form a poly(amic acid); the ketimine groups are hydrolyzed to ketone groups, and the poly(amic acid) is then imidized. The final polyimide-block polyether-polyketone is characterized; morphol. and glass transition are determined  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35  
 IT 123-30-8DP, 4-Aminophenol, reaction products with [bis(fluorophenyl)methylene]benzenamine-hydroquinone copolymer 109997-75-3P 141343-02-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation and mol. weight and glass transition of)  
 IT 141343-02-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and mol. weight and glass transition of)  
 RN 141343-02-4 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(phenylcarbonimidoyl)-1,4-phenylene],  $\alpha$ -[4-[[4-(3-aminophenoxy)phenyl](phenylimino)methyl]phenyl]- $\omega$ -(3-aminophenoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A

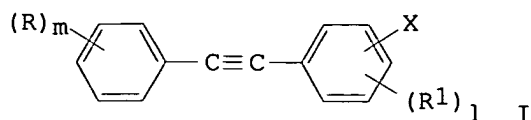


PAGE 1-B



L50 ANSWER 19 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:153080 HCAPLUS  
 DN 116:153080  
 TI Polyimides end-capped with diarylacetylenes and products incorporating them  
 IN Paul, Charles W.; Schulz, Rose Ann; Fenelli, Steven P.  
 PA National Starch and Chemical Investment Holding Corp., USA  
 SO Eur. Pat. Appl., 24 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 443352	A2	19910828	EP 1991-101313	19910131
	EP 443352	A3	19920826		
	EP 443352	B1	19951206		
	R: DE, FR, GB, IT				
	CA 2035816	AA	19910821	CA 1991-2035816	19910206
	CA 2035816	C	19960625		
PRAI	US 1990-482362	A	19900220		
GI					

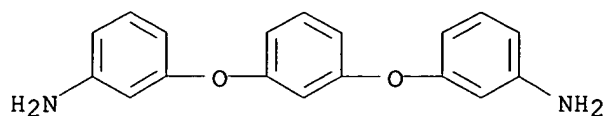


- AB An oligomeric polyamic acid, polyamic acid ester, polyisoimide, and/or polyimide is end-capped with a diarylacetylene (I; m = 0-5; l = 0-4; R, R<sub>1</sub> = halogen, C1-4 alkyl, alkoxy, aryloxy, haloaryl, haloalkyl, haloacyl, arylacyl; X = NH<sub>2</sub>, CHO, NCO, anhydride, CO<sub>2</sub>H, ester, acyl halide). When m = l = 0 and X = m-NH<sub>2</sub>, the oligomer must have a glass temperature (T<sub>g</sub>) >135° after imidization, but prior to the cure of the I end-caps. The cured products are used for encapsulation of electronic devices, as adhesives, and as moldings. Thus, a solution of bisaniline P in THF was treated with benzophenonetetracarboxylic dianhydride at 40-45° over 1 h. Addition of 3-(phenylethynyl)aniline in THF, stirring at 40-45°, cooling to 10°, adding 1,3-dicyclohexylcarbodiimide in THF for dehydration, keeping 16 h at 5°, filtering off urea byproduct, and precipitating in iso-PrOH gave the oligomer, shown by IR to have isoimide structure, with inherent viscosity 0.16 dL/g (0.5 g/dL N-methylpyrrolidinone, 25°). After cure, the T<sub>g</sub> was 295°.
- IC ICM C08G073-10
- CC 37-3 (Plastics Manufacture and Processing)
- IT **7681-65-4, Cuprous iodide**  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts containing, for reaction of bromonitrobenzene with phenylacetylene)
- IT 28155-61-5DP, arylacetylene-terminated **54053-19-9DP**, arylacetylene-terminated 119380-81-3DP, arylacetylene-terminated 138859-80-0P 138859-94-6P 138860-00-1P  
 RL: **PREP (Preparation)**  
 (oligomeric, preparation and ring closure of)
- IT **7681-65-4, Cuprous iodide**  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts containing, for reaction of bromonitrobenzene with phenylacetylene)
- RN 7681-65-4 HCAPLUS
- CN Copper iodide (CuI) (8CI, 9CI) (CA INDEX NAME)

Cu-I

- IT **54053-19-9DP**, arylacetylene-terminated  
 RL: **PREP (Preparation)**  
 (oligomeric, preparation and ring closure of)
- RN 54053-19-9 HCAPLUS
- CN 1,3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with 3,3'-[1,3-phenylenebis(oxy)]bis[benzenamine] (9CI) (CA INDEX NAME)
- CM 1
- CRN 10526-07-5
- CMF C18 H16 N2 O2

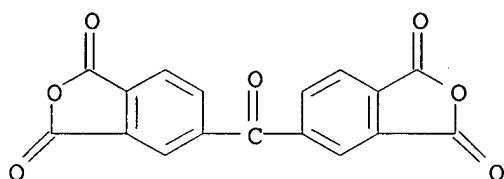




CM 2

CRN 2421-28-5

CMF C17 H6 O7



L50 ANSWER 20 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:60830 HCAPLUS

DN 116:60830

TI Heat-resistant cyclic **oligomers** for plasticizers and resin compositions containing the **oligomers**

IN Yukinari, Toshimitsu; Okamoto, Norimitsu; Kayano, Chikafumi

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

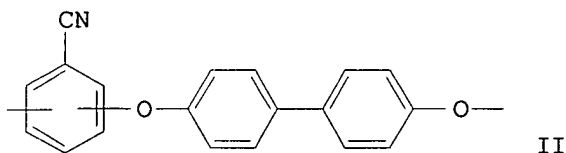
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03167218	A2	19910719	JP 1989-306823	19891127
PRAI	JP 1989-306823		19891127		
GI					



AB Cyclic **oligomers** with average mol. weight 500-5000 and containing unit p-C<sub>6</sub>H<sub>4</sub>CO-p-C<sub>6</sub>H<sub>4</sub>O(p-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>O (I) and unit II, at I:II mol ratio (0-10):(10-0), plasticizers based on the **oligomers**, and resin compns. containing 0.001-5% **oligomers** are prepared Thus, polymerization of 0.4 mol 2,6-dichlorobenzonitrile and 0.8 mol 4,4'-dihydroxybiphenyl in N-methyl-2-pyrrolidone in the presence of K<sub>2</sub>CO<sub>3</sub> at 195° and subsequent treatment with 0.4 mol 4,4'-difluorobenzophenone for 3 h gave 57.2 g cyclic **oligomer** mixture (total number of unit I and II 2-6,

number of I = 1-5, number of II = 0-3) with decomposition initiating temperature 562°. Polyether ether ketone (380G) containing 1.0% **oligomer** mixture showed melt viscosity 8000 P at 390°, vs. 11,000 for 380G alone.

IC ICM C08G065-40  
ICS C07C255-54; C08K005-07; C08K005-16; C08L071-10; C08L101-00

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35

ST cyclic arom polyether **oligomer** plasticizer; polyether polyketone cyclic **oligomer** plasticizer; heat resistance plasticizer cyclic **oligomer**

IT Heat-resistant materials  
(cyclic aromatic polyether-polyketone **oligomers**, for plasticizers)

IT Plasticizers  
(cyclic aromatic polyether-polyketone **oligomers**, preparation of)

IT Polyethers, uses  
RL: USES (Uses)  
(aromatic, plasticizers for, cyclic aromatic polyether-polyketone **oligomers** as)

IT Polyketones  
RL: USES (Uses)  
(polyether-, plasticizers for, cyclic aromatic polyether-polyketone **oligomers** as)

IT Polyketones  
RL: USES (Uses)  
(polyether-, aromatic, cyano-containing, cyclic **oligomers**, manufacture of, plasticizers, heat-resistant)

IT Polyethers, uses  
RL: USES (Uses)  
(polyketone-, plasticizers for, cyclic aromatic polyether-polyketone **oligomers** as)

IT Polyethers, preparation  
RL: PREP (Preparation)  
(polyketone-, aromatic, cyano-containing, cyclic **oligomers**, manufacture of, plasticizers, heat-resistant)

IT 134437-91-5P  
RL: PREP (Preparation)  
(**oligomeric**, cyclic, preparation of, heat-resistant, as plasticizer)

IT 31694-16-3  
RL: USES (Uses)  
(plasticizers for, cyclic aromatic polyether-polyketone **oligomers** as)

IT 113527-17-6P, 2,6-Dichlorobenzonitrile-2,6-difluorobenzonitrile-resorcinol copolymer  
RL: **PREP (Preparation)**  
(preparation of, plasticizers for, cyclic aromatic polyether-polyketone **oligomers** as)

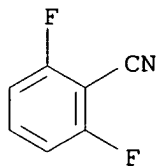
IT 113527-17-6P, 2,6-Dichlorobenzonitrile-2,6-difluorobenzonitrile-resorcinol copolymer  
RL: **PREP (Preparation)**  
(preparation of, plasticizers for, cyclic aromatic polyether-polyketone **oligomers** as)

RN 113527-17-6 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol and 2,6-difluorobenzonitrile (9CI) (CA INDEX NAME)

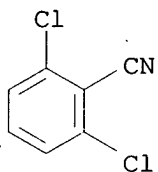
CM 1

CRN 1897-52-5  
CMF C7 H3 F2 N



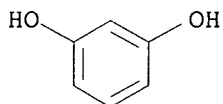
CM 2

CRN 1194-65-6  
CMF C7 H3 Cl2 N



CM 3

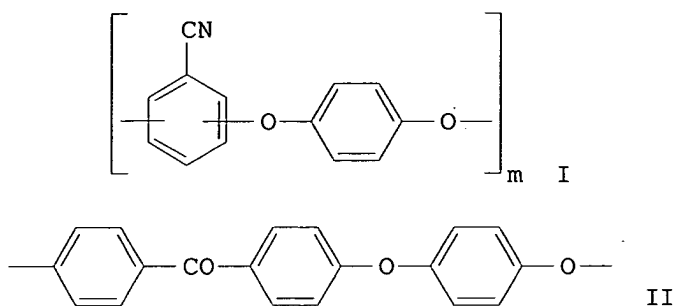
CRN 108-46-3  
CMF C6 H6 O2



L50 ANSWER 21 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1992:42256 HCAPLUS  
DN 116:42256  
TI Aromatic polyether block copolymers with good heat resistance and their  
manufacture  
IN Matsuo, Shigeru  
PA Idemitsu Kosan Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03181519	A2	19910807	JP 1989-321007	19891211
PRAI	JP 1989-321007		19891211		

GI



AB The title copolymers with melt viscosity at 400° ≥500 P comprise I blocks (10 ≤ m ≤ 100) and II units at I/(I + II) = 0.15-0.35 (mol ratio). The copolymers are manufactured by treating dihalobenzonitriles with hydroquinone (III) in neutral polar solvents in the presence of alkali metal compds., followed by treating with III and 4,4'-dihalobenzophenones in this order or at the same time. Thus, 0.153 mol III and 0.15 mol 2,6-dichlorobenzonitrile were heated in N-methyl-2-pyrrolidone in the presence of 0.6 mol K<sub>2</sub>CO<sub>3</sub> with bubbling of Ar at 195° to give an **oligomer** with average mol. weight 5800, which was then treated with 0.315 mol III at 195° for 30 min, then with 0.35 mol 4,4'-difluorobenzophenone at 195° for 1 h to give 126.5 g copolymer having I blocks (m = 28) and II at I/(I + II) = 0.30 (mol ratio) in 96% yield. The copolymer showed melt viscosity at 400° 29,000 P, glass transition temperature 164°, and thermal decomposition-initiating temperature 541°.

IC ICM C08G065-40

CC 35-5 (Chemistry of Synthetic High Polymers)

IT 138503-32-9P

RL: **IMF (Industrial manufacture); PREP (Preparation)**  
(manufacture of heat-resistant)

IT 138503-32-9P

RL: **IMF (Industrial manufacture); PREP (Preparation)**  
(manufacture of heat-resistant)

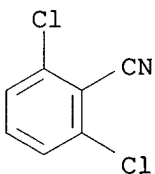
RN 138503-32-9 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,4-benzenediol and bis(4-fluorophenyl)methanone, block (9CI) (CA INDEX NAME)

CM 1

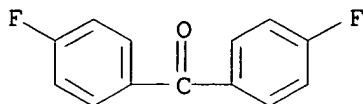
CRN 1194-65-6

CMF C7 H3 Cl2 N



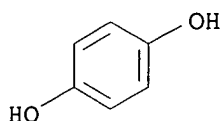
CM 2

CRN 345-92-6  
CMF C13 H8 F2 O

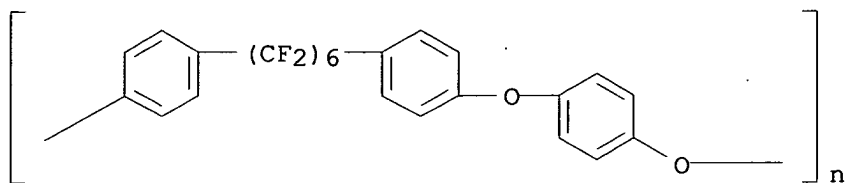


CM 3

CRN 123-31-9  
CMF C6 H6 O2

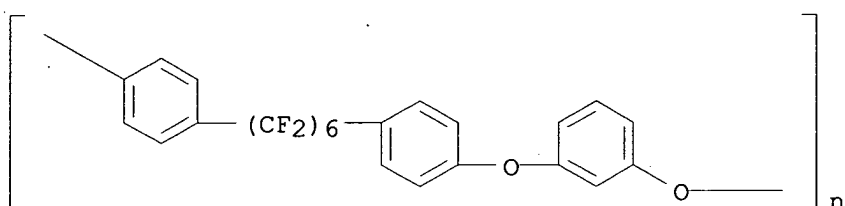


L50 ANSWER 22 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1991:537292 HCAPLUS  
DN 115:137292  
TI Multiphase imide block copolymers: new materials for microelectronics applications  
AU Labadie, Jeff W.; Hedrick, James L.  
CS Almaden Res. Cent., IBM Res., San Jose, CA, 95120-6099, USA  
SO Proceedings - Electronic Components & Technology Conference (1990), 40th(1), 706-10  
CODEN: PETCES  
DT Journal  
LA English  
AB Imide copolymers were prepared via a poly(amic ester) precursor copolymer with novel perfluoroalkylene-arylene ether (PFAAE) and phenylquinoxaline-aryl ether (PQE) amine-functional oligomers. The copolymers could be processed and cured via conventional techniques to afford high-quality coatings. The block copolymers showed excellent high dimensional stability and tough, ductile mech. properties. The imide-PFAAE copolymers showed a reduction in dielec. constant relative to pyromellitic dianhydride-oxydianiline copolymer ( $\epsilon \approx 2.8$ ) and the imide-PQE copolymers showed excellent self-adhesion as predicted.  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 36, 38, 42, 76  
IT 129197-57-5P 129197-58-6P 129197-59-7P 129197-60-0P  
129219-20-1P 129219-21-2P 129219-22-3P 129219-23-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, in manufacture of heat-resistant dielec. coating materials)  
IT 129197-59-7P 129197-60-0P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, in manufacture of heat-resistant dielec. coating materials)  
RN 129197-59-7 HCAPLUS  
CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoro-1,6-hexanediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 129197-60-0 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylene(1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoro-1,6-hexanediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



L50 ANSWER 23 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:229914 HCAPLUS

DN 114:229914

TI New low dielectric constant polyimide block and random copolymers

AU Labadie, Jeff W.; Hedrick, James L.

CS Almaden Res. Cent., IBM Res., San Jose, CA, 95120-6099, USA

SO International SAMPE Electronics Conference (1990), 4(Electron. Mater.--Our Future), 495-506

CODEN: ISECE8; ISSN: 1051-1067

DT Journal

LA English

AB Block copolymers based on the polyamic ester of poly(4,4'-oxydiphenylenepyromellitimide) and perfluoroalkylene **aryl ethers** were synthesized as soluble polyimide precursors. The amine-terminated perfluoroalkylene **aryl ether oligomers** were synthesized from 1,6-bis(4-fluorophenyl)perfluorohexane and bisphenols via fluoroalkyl activated **aryl ether** synthesis. Fluoropolymer structure, weight% incorporation, and mol. weight were varied. Films were cast and cured to afford a polyimide block copolymer with dielec. constant  $\epsilon_r$  2.8, and with high dimensional stability and excellent mech. properties. Random copolymers based on the same perfluoroalkylene **aryl ether** were also synthesized, and the final properties of the block and random polymers are compared.

CC 37-3 (Plastics Manufacture and Processing)

IT 129197-57-5P 129197-58-6P **129197-59-7P 129197-60-0P**

129219-20-1P 129219-21-2P 129219-22-3P 129219-23-4P 133162-21-7P  
133162-22-8P 133905-70-1P 133905-92-7P

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(preparation and characterization of low-dielec.-constant)

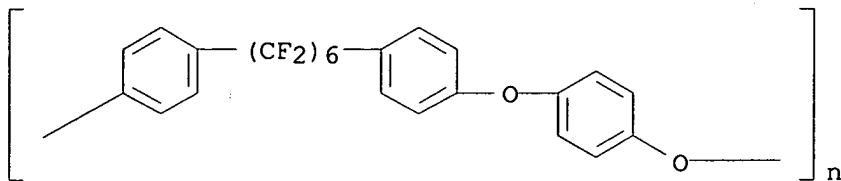
IT **129197-59-7P 129197-60-0P**

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(preparation and characterization of low-dielec.-constant)

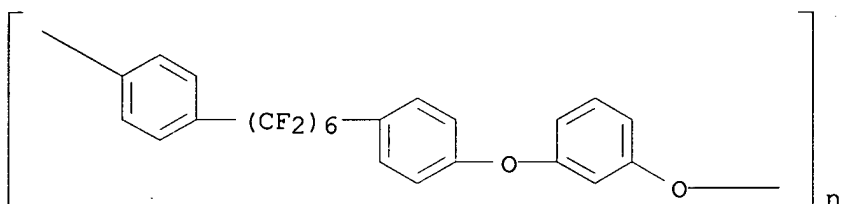
RN 129197-59-7 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoro-1,6-hexanediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 129197-60-0 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylene(1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoro-1,6-hexanediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



L50 ANSWER 24 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:229594 HCAPLUS

DN 114:229594

TI Preparation of phenylacetylene derivatives for use in polymers

IN Delfort, Bruno; Lucotte, Georges; Cormier, Laurent

PA Institut National de Recherche Chimique Appliquee, Fr.

SO Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DT Patent

LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 409684	A1	19910123	EP 1990-401898	19900629
	R: AT, BE, CH, DE, FR, GB, GR, IT, LI, LU, NL				
	FR 2649975	A1	19910125	FR 1989-9720	19890719
	FR 2649975	B1	19911122		
	CA 2020971	AA	19910120	CA 1990-2020971	19900711
	JP 03063244	A2	19910319	JP 1990-189258	19900716
PRAI	FR 1989-9720	A	19890719		

OS MARPAT 114:229594

AB The acetylenes R2C.tplbond.CC6H3(R1)ZX [R1 = H, CN, NO2; R2 = H, HOC(ME)2, Me3Si; X = Cl, F, NO2; Z = direct bond, COC6H4, SO2C6H4] are useful in the manufacture of polymers with relatively low m.p. Heating 0.1075 mol 4-bromo-4'-fluorobenzophenone, 0.160 mol 2-methyl-3-butyn-2-ol, 107 mg (Ph3P)2PdCl2, 215 mg Ph3P, and 215 mg CuI in 800 ML Et3N for 6 h at 90° gave 100% 4-FC6H4COC6H4-p-C.tplbond.CC(Me)2OH, the heating of which with NaOH in PhCl at 110° for 2 h gave 90% 4-FC6H4COC6H4C.tplbond.CH-4 (I). Polymerizing 0.55 mol bisphenol A with 0.50

mol. 4,4'-difluorobenzophenone in N-methylpyrrolidone containing K<sub>2</sub>CO<sub>3</sub> at 160-180° with distillation of H<sub>2</sub>O, adding 0.10 mol. I, and heating 2 h at 140° gave a polymer with number-average mol. weight 4930, glass temperature 167°, temperature of initial weight loss 475°, and flexural modulus 1690 MPa.

IC ICM C07C049-835

ICS C07C317-22; C07C255-53; C07C049-813; C07C317-14; C07C255-50; C08G075-23; C08G065-48; C07C205-57

ICA C07C317-32

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 25

IT 129246-32-8P 129246-33-9P 129246-34-0P 129246-35-1P 129246-36-2P

**129246-37-3P 129269-57-4P** 133919-37-6P 133919-38-7P

RL: PRP (Properties); **PREP (Preparation)**

(preparation and mech. and thermal properties of)

IT **129246-37-3P 129269-57-4P**

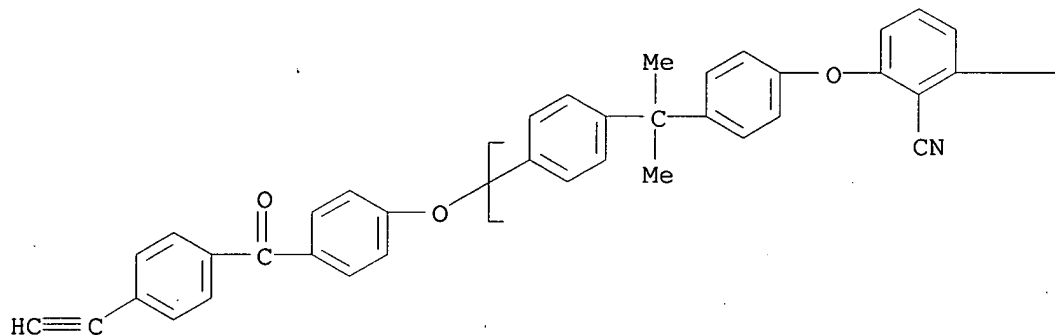
RL: PRP (Properties); **PREP (Preparation)**

(preparation and mech. and thermal properties of)

RN 129246-37-3 HCAPLUS

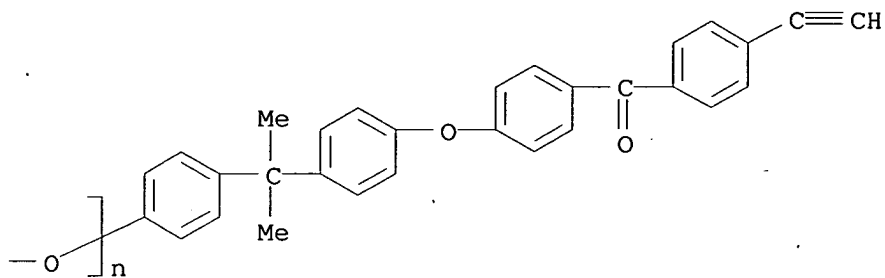
CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene], α-[4-[1-[4-[4-(4-ethynylbenzoyl)phenoxy]phenyl]-1-methylethyl]phenyl]-ω-[4-(4-ethynylbenzoyl)phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



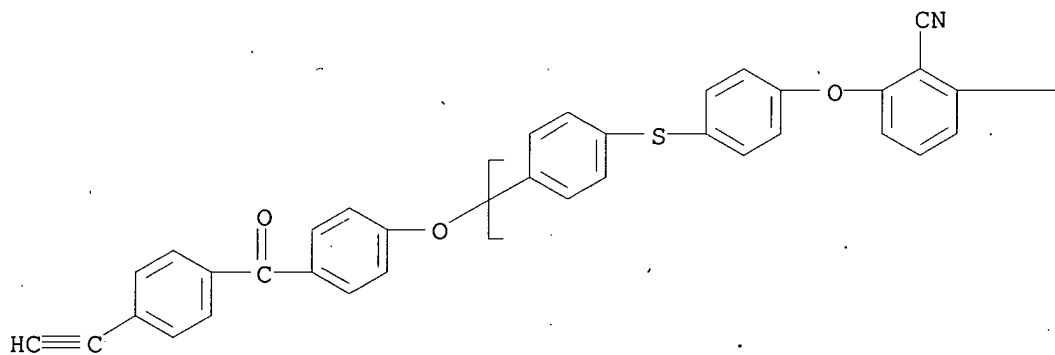


PAGE 1-B

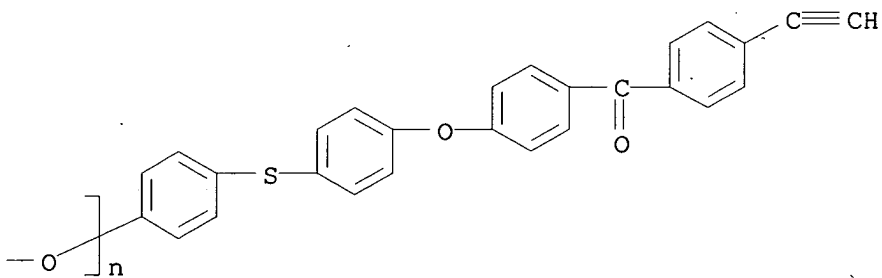


RN 129269-57-4 HCAPLUS  
 CN Poly[oxy(2-cyano-1,3-phenylene)oxy-1,4-phenylenethio-1,4-phenylene],  
 α-[4-[[4-[4-(4-ethynylbenzoyl)phenoxy]phenyl]thio]phenyl]-ω-[4-  
 (4-ethynylbenzoyl)phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L50 ANSWER 25 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:165458 HCAPLUS

DN 114:165458

TI New low dielectric constant polyimide block and random copolymers

AU Labadie, Jeff W.; Hedrick, James L.

CS Almaden Res. Cent., IBM Res., San Jose, CA, USA

SO SAMPE Journal (1990), 26(4), 19-24

CODEN: SAJUAX; ISSN: 0091-1062

DT Journal

LA English

AB Block copolymers of a nonfluorinated polyimide with a highly fluorinated coblock were prepared by adding a solution of the di-Et ester diacyl chloride of pyromellitic dianhydride to a mixture of oxydianiline and **oligomers** prepared by adding 3-aminophenol as an end-capping agent to poly(perfluoroalkyl **aryl ethers**) prepared from bisphenols and 1,6-(4-fluorophenyl)perfluorohexane. The poly(amic ester) chemical allowed for the use of THF or toluene as a cosolvent with N-methylpyrrolidone to improve the solubility of the fluorinated coblock; moreover, the resulting block copolymer could be isolated by precipitation and washed with toluene to remove unreacted poly(perfluoroalkyl **aryl ether**). The cured polyimide block polymers had good thermal stability at 400°, excellent mech. properties, and a lower dielec. constant than pyromellitic dianhydride (I)-4,4'-oxydianiline (II) copolyimides. The diamines, 1,6-bis[4-(3-aminophenoxy)phenyl]perfluorohexane (III) and 1,6-bis[4-(4-aminophenoxy)phenyl]perfluorohexane (IV), synthesized by treating 1,6-bis(4-fluorophenyl)perfluorohexane with either 1,3- or 1,4-aminophenol, displayed good reactivity with I and yielded random copolymers under conventional poly(amic acid) polymerization conditions. Copolymers of III and IV with I and II were also prepared. The III copolymers were more stable than the IV copolymers; however, none of the copolymers were as thermally stable as I-II copolyimides.

CC 37-3 (Plastics Manufacture and Processing)

IT 129219-20-1DP, aminophenol-terminated 129219-21-2DP,  
aminophenol-terminated 129219-22-3DP, aminophenol-terminated  
129219-23-4DP, aminophenol-terminated 133029-93-3P **133029-94-4P**  
**133029-95-5P** 133069-20-2P

RL: SPN (Synthetic preparation); PREP (Preparation)

(**oligomeric**, preparation and properties and polymerization of, with poly(amic esters))

IT **133029-94-4P 133029-95-5P**

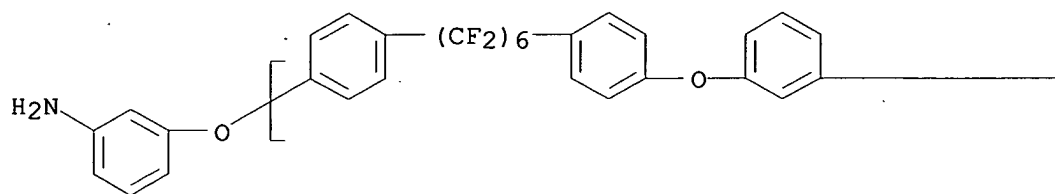
RL: SPN (Synthetic preparation); PREP (Preparation)

(**oligomeric**, preparation and properties and polymerization of, with poly(amic esters))

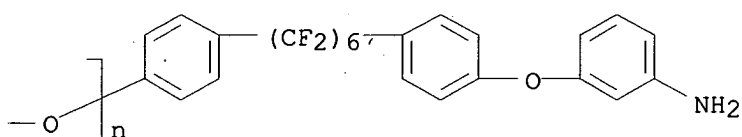
RN 133029-94-4 HCAPLUS

CN Poly[oxy-1,3-phenyleneoxy-1,4-phenylene(1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoro-1,6-hexanediyl)-1,4-phenylene],  $\alpha$ -[4-[6-[4-(3-aminophenoxy)phenyl]-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyl]phenyl]- $\omega$ -(3-aminophenoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A

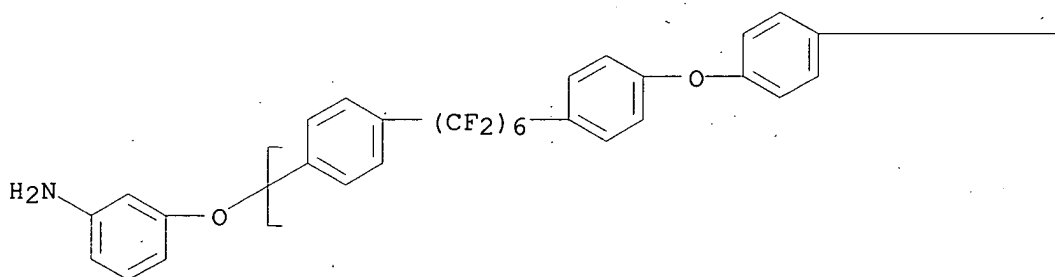


PAGE 1-B

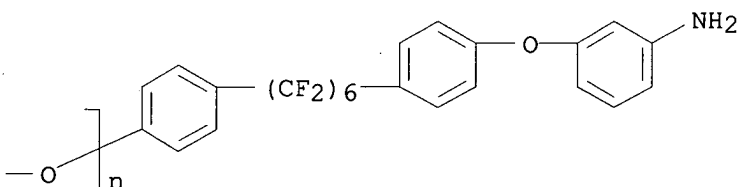


RN 133029-95-5 HCAPLUS  
 CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1,1,2,2,3,3,4,4,5,5,6,6-dodecafluoro-1,6-hexanediyl)-1,4-phenylene],  $\alpha$ -[4-[6-[4-(3-aminophenoxy)phenyl]-1,1,2,2,3,3,4,4,5,5,6,6-dodecafluorohexyl]phenyl]- $\omega$ -(3-aminophenoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L50 ANSWER 26 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:615146 HCAPLUS

DN 111:215146

TI Preparation of high-quality powdered poly(cyanoaryl ether) without mechanical grinding

IN Matsuo, Shigeru; Shinoda, Jitsuo; Bando, Tooru

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01135833	A2	19890529	JP 1987-294636	19871121
	JP 05000409	B4	19930105		
PRAI	JP 1987-294636		19871121		

AB Title polyethers, useful for elec. and electronic and mech. parts, are prepared by polycondensation of dihalogenobenzonitriles with resorcinol (I) in solvents in the presence of bases to  $\leq 14\%$  polymer concentration, followed by adding solvents which are compatible with the above solvents, but do not dissolve the polymers formed. Thus, 2,6-dichlorobenzonitrile (II) 51.51, I 33.04, and Na<sub>2</sub>CO<sub>3</sub> 35 g and 300 mL N-methylpyrrolidone (III) were mixed, heated to 200° over 40 min under Ar, azeotropically dehydrated at 197-200° for 140 min using toluene, treated with 0.52 g 2,6-difluorobenzonitrile (IV) for 2 h, diluted with 400 mL III at 120°, 400 mL MEK was added over 15 min, filtered, and the slurry polymer particles were washed with Me<sub>2</sub>CO and H<sub>2</sub>O, and dried to obtain powdered II-IV-I copolymer [reduced viscosity 1.22 (60°, 0.2 g/dL, in p-chlorophenol), average particle diameter 40  $\mu$ m] in 92% yield, which contained 0.0% **oligomers** and 15 ppm Na.

IC ICM C08G065-40

CC 35-5 (Chemistry of Synthetic High Polymers)

IT **113506-35-7P**, 2,6-Dichlorobenzonitrile-resorcinol copolymer

**113527-17-6P**, 2,6-Dichlorobenzonitrile-2,6-difluorobenzonitrile-resorcinol copolymer

RL: **PREP (Preparation)**

(powdered, preparation of, high-quality)

IT **113506-35-7P**, 2,6-Dichlorobenzonitrile-resorcinol copolymer

**113527-17-6P**, 2,6-Dichlorobenzonitrile-2,6-difluorobenzonitrile-resorcinol copolymer

RL: **PREP (Preparation)**

(powdered, preparation of, high-quality)

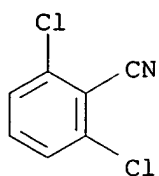
RN 113506-35-7 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol (9CI) (CA INDEX NAME)

CM 1

CRN 1194-65-6

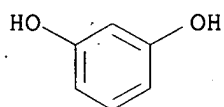
CMF C7 H3 Cl2 N



CM 2

CRN 108-46-3

CMF C6 H6 O2



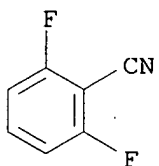
RN 113527-17-6 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol and 2,6-difluorobenzonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 1897-52-5

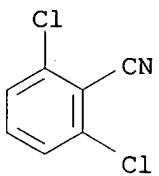
CMF C7 H3 F2 N



CM 2

CRN 1194-65-6

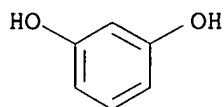
CMF C7 H3 Cl2 N



CM 3

CRN 108-46-3

CMF C6 H6 O2



L50. ANSWER 27 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:58345 HCAPLUS

DN 110:58345

TI Heat-resistant, flame-retardant aromatic polyester sulfones and their manufacture

IN Sugio, Akitoshi; Kawaki, Takao; Kobayashi, Makoto; Ukita, Eiji; Honda, Noriaki

PA Mitsubishi Gas Chemical Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63182339	A2	19880727	JP 1987-14146	19870126
PRAI	JP 1987-14146		19870126		

AB Polymers are prepared by reacting (A) dihydroxy-terminated sulfone **oligomers**, (B) brominated bisphenols, (C) dihydric phenols, and (D) iso- or terephthaloyl chloride at A/B mol ratio 1-99:99-1 and D/(A + B + C) mol ratio 0.95-1.05. Thus, heating bisphenol A 44.1, DMSO 113, and PhCl 322 g to 70°, mixing with 29.9 g 52.0% aqueous NaOH, distilling at 110-140° to remove H<sub>2</sub>O, heating at 158° for 150 min with 41.6 g 4,4'-dichlorodiphenyl sulfone gave an **oligomer** (74.9 g) with m.p. 144-147°. The **oligomer** 3.89, bisphenol A 3.39, 2,2-bis(3,5-dibromo-4-hydroxyphenyl)propane 1.58, and Et<sub>3</sub>N 4.05 g in 150 mL CH<sub>2</sub>Cl<sub>2</sub> were treated with 4.06 g 1:1 iso- and terephthaloyl chloride at 20° for 2.5 h to give 11.0 g polymer with logarithmic viscosity 0.44, glass temperature 198°, and 5% weight loss temperature 408°. The polymer was solvent cast to form a 0.20-mm thick transparent film with UL 94 burning test VO.

IC ICM C08G063-68

ICS C08G063-68

CC 35-5 (Chemistry of Synthetic High Polymers)

ST polyester polysulfone fire resistant; heat resistant arom polyester sulfone; sulfone **oligomer** heat resistant polyester

IT 84668-23-5P 118496-92-7P 118496-93-8P 118496-94-9P 118496-95-0P  
118496-96-1P 118496-97-2P

RL: PREP (Preparation)

(preparation of, heat- and fire-resistant)

IT 118496-96-1P

RL: PREP (Preparation)

(preparation of, heat- and fire-resistant)

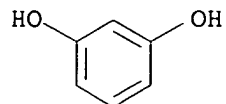
RN 118496-96-1 HCAPLUS

CN 1,3-Benzenedicarbonyl dichloride, polymer with 1,4-benzenedicarbonyl dichloride, 1,3-benzenediol, 4,4'-(1-methylethylidene)bis[2,6-dibromophenol] and 1,1'-sulfonylbis[4-chlorobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 108-46-3

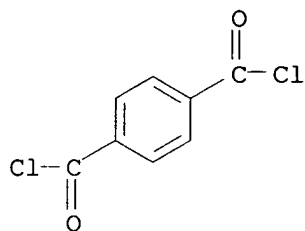
CMF C6 H6 O2



CM 2

CRN 100-20-9

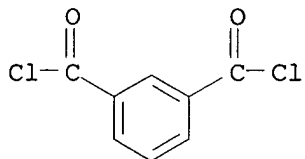
CMF C8 H4 Cl2 O2



CM 3

CRN 99-63-8

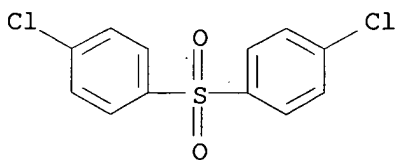
CMF C8 H4 Cl2 O2



CM 4

CRN 80-07-9

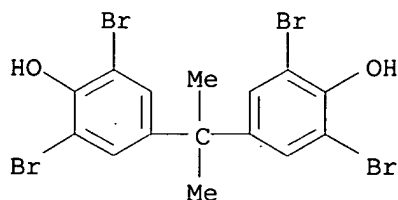
CMF C12 H8 Cl2 O2 S



CM 5

CRN 79-94-7

CMF C15 H12 Br4 O2



L50 ANSWER 28 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:511048 HCAPLUS

DN 109:111048

TI Amino terminated poly(aryl ether ketones)

IN Matzner, Markus; Papuga, Donald Mark

PA Amoco Corp., USA

SO Eur. Pat. Appl., 28 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 254585	A2	19880127	EP 1987-306555	19870724
	EP 254585	A3	19890222		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	US 4959424	A	19900925	US 1986-889203	19860725
	JP 63054423	A2	19880308	JP 1987-181297	19870722
	US 5137988	A	19920811	US 1991-730103	19910715
PRAI	US 1986-889203	A	19860725		
	US 1990-526386	B1	19900521		

AB **Oligomeric** amino-terminated poly(aryl ether ketones) useful as building blocks for a variety of polymers with good phys. properties are prepared by reacting dihalo-terminated poly(aryl ether ketones) with aminophenols under nucleophilic substitution conditions and then nucleophilic reaction of the hydroxy-terminated **oligomeric** poly(aryl ether ketones) with halonitroarom. compds., followed by reduction of the dinitro compds., or reacting a dihalo-terminated **oligomers** with NH3 or a primary amine, optionally in the presence of a catalyst. Thus, a mixture of 0.1 mol difluoro-terminated **oligomeric** PEEK having mol. weight .apprx.1500, 0.120 mol Na2CO3, 0.010 mol K2CO3, 30-40 mL xylene, and 80-100 g di-Ph sulfone was heated with .apprx.0.25 mol p-aminophenol to 200° over 1 h, to 250° and held at the temperature for 15 min, and to 280-320° and held at the temperature for 1-2 h to give an amino-terminated **oligomeric** PEEK.

IC ICM C08G061-12

ICS C08G065-48; C07C087-50; C07C079-10

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

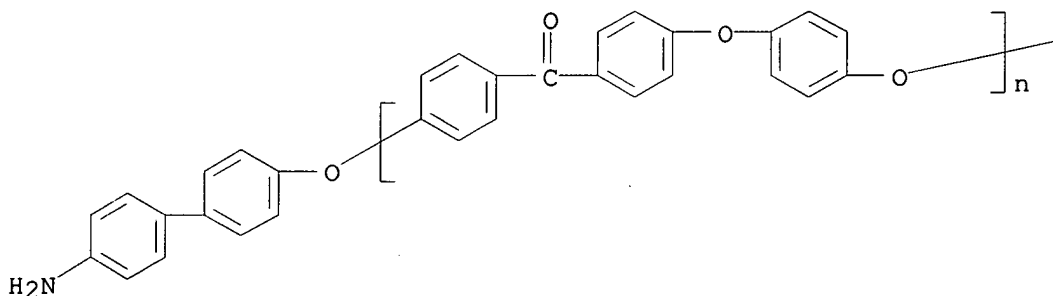
ST amino terminated polyether polyketone **oligomer**

IT Polyketones

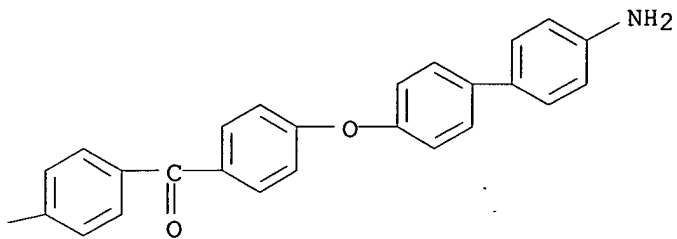


RL: PREP (Preparation)  
 (polyether-, aromatic, **oligomeric**, amino-terminated, manufacture of)  
 IT Polyethers, preparation  
 RL: PREP (Preparation)  
 (polyketone-, aromatic, **oligomeric**, amino-terminated, manufacture of)  
 IT 123-30-8 591-27-5 1204-79-1 3396-01-8 4363-04-6  
 RL: USES (Uses)  
 (amination with, of **oligomeric** polyether-polyketones)  
 IT 29658-26-2, 4,4'-Difluorobenzophenone-hydroquinone copolymer 30604-15-0,  
 Diphenyl ether-terephthaloyl chloride copolymer 31694-16-3 109232-92-0  
 109238-07-5 109267-16-5 116236-14-7 116236-15-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (**oligomeric**, amination of)  
 IT **116189-36-7P** 116189-37-8P 116189-38-9P **116189-39-0P**  
 116189-40-3P 116189-41-4P **116220-48-5P** **116220-49-6P**  
 116220-50-9P 116220-51-0P 116220-52-1P  
 RL: PREP (Preparation)  
 (**oligomeric**, manufacture of)  
 IT **116189-36-7P** **116189-39-0P** **116220-48-5P**  
**116220-49-6P**  
 RL: PREP (Preparation)  
 (**oligomeric**, manufacture of)  
 RN 116189-36-7 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene),  
 α-[4-[4-[(4'-amino[1,1'-biphenyl]-4-yl)oxy]benzoyl]phenyl]-ω-  
 [(4'-amino[1,1'-biphenyl]-4-yl)oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



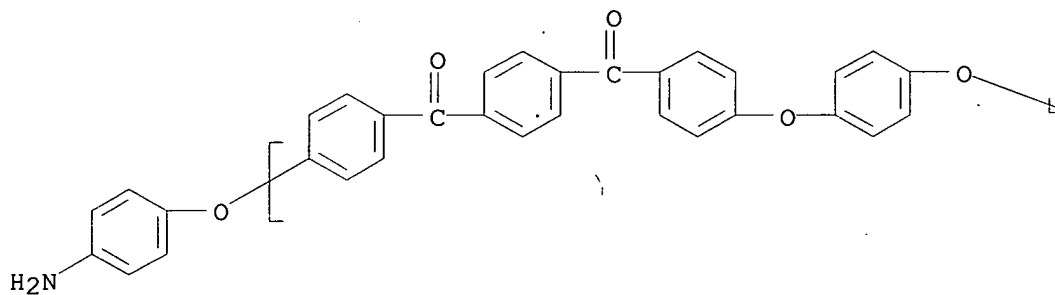
PAGE 1-B



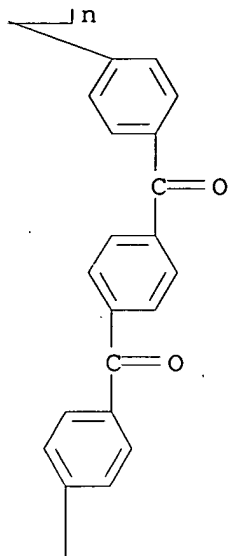
RN 116189-39-0 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylenecarbonyl-1,4-phenylene),  $\alpha$ -[4-[4-[4-(4-aminophenoxy)benzoyl]benzoyl]phenyl]- $\omega$ -(4-aminophenoxy)- (9CI) (CA INDEX NAME)

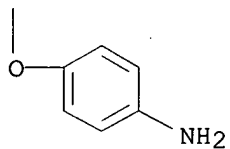
PAGE 1-A



PAGE 1-B

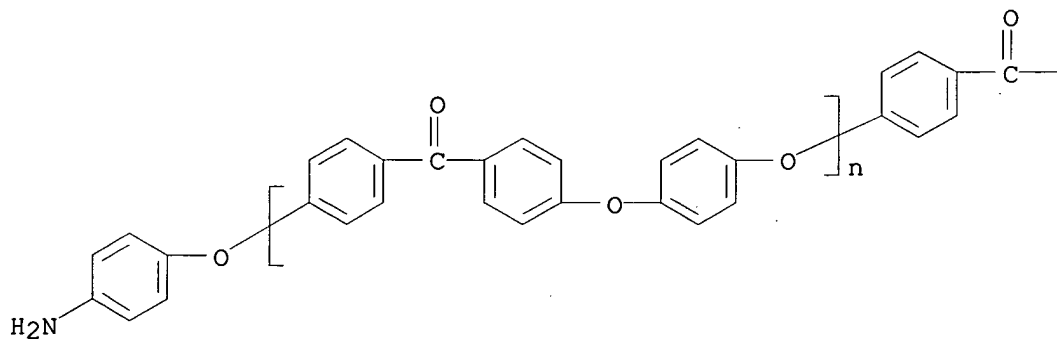


PAGE 2-B

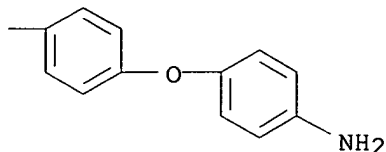


RN 116220-48-5 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene),  
 α-[4-[4-(4-aminophenoxy)benzoyl]phenyl]-ω-(4-aminophenoxy)-  
 (9CI) (CA INDEX NAME)

PAGE 1-A

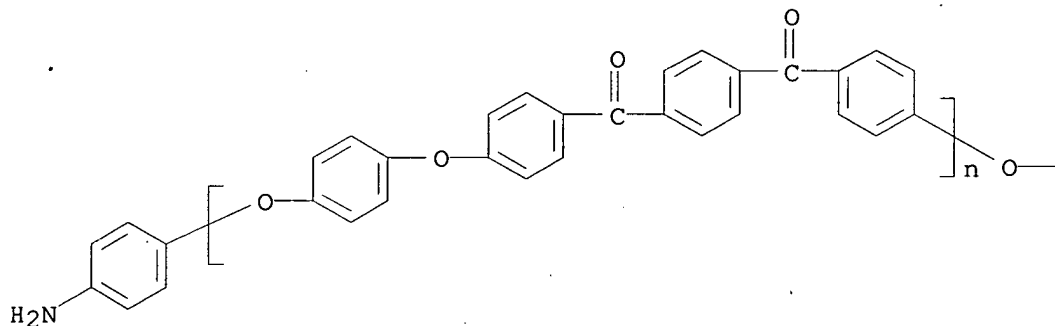


PAGE 1-B

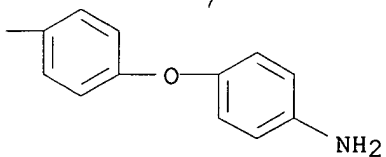


RN 116220-49-6 HCAPLUS  
CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylenecarbonyl-1,4-phenylene),  $\alpha$ -(4-aminophenyl)- $\omega$ -[4-(4-aminophenoxy)phenoxy]-  
(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L50 ANSWER 29 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1988:187833 HCAPLUS  
DN 108:187833  
TI Manufacture of modified polycyanoaryl ethers  
IN Matsuo, Shigeru  
PA Idemitsu Kosan Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DT Patent

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62275124	A2	19871130	JP 1986-117152	19860523
	JP 03044567	B4	19910708		
PRAI	JP 1986-117152		19860523		

AB Dihalobenzonitriles react with alkali metal salts of resorcinol to give **oligomers**, which are treated with polyfunctional compds. to give modified polycyanoaryl ethers. The polymers have high tensile and impact strength, and are useful in elec. or electronic parts.  
2,6-Dichlorobenzonitrile 276.4, resorcinol 280.0, and K<sub>2</sub>CO<sub>3</sub> 294.0 mmol were dissolved in N-methylpyrrolidone-PhMe and heated at 195° for 1 h under Ar to give an **oligomer**. Heating the **oligomer** with pentafluorobenzonitrile at 195° for 1 h gave polymer test pieces which showed tensile strength 1450 kg/cm<sup>2</sup> and impact strength 25 kg-cm/cm, vs. 650 and 7, resp., without the C6F<sub>5</sub>CN.

IC ICM C08G065-40

CC 37-3 (Plastics Manufacture and Processing)

IT 114321-75-4P 114321-76-5P

RL: PREP (Preparation)

(manufacture of, impact-resistant, with good tensile strength)

IT 114321-75-4P 114321-76-5P

RL: PREP (Preparation)

(manufacture of, impact-resistant, with good tensile strength)

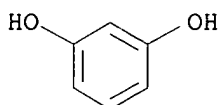
RN 114321-75-4 HCAPLUS

CN Benzonitrile, pentafluoro-, polymer with 1,3-benzenediol dipotassium salt and 2,6-dichlorobenzonitrile (9CI) (CA INDEX NAME)

CM 1

CRN 13898-24-3

CMF C6 H6 O2 . 2 K

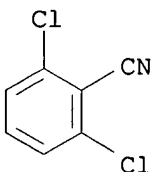


● 2 K

CM 2

CRN 1194-65-6

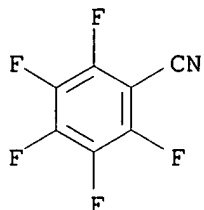
CMF C7 H3 Cl<sub>2</sub> N



CM 3

CRN 773-82-0

CMF C7 F5 N



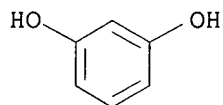
RN 114321-76-5 HCAPLUS

CN Benzonitrile, 2,6-dichloro-, polymer with 1,3-benzenediol dipotassium salt and 2,4,6-trichloro-1,3,5-triazine (9CI) (CA INDEX NAME)

CM 1

CRN 13898-24-3

CMF C6 H6 O2 . 2 K

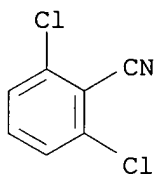


● 2 K

CM 2

CRN 1194-65-6

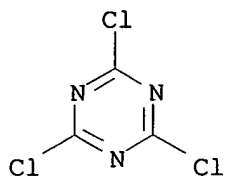
CMF C7 H3 Cl2 N



CM 3

CRN 108-77-0

CMF C3 Cl3 N3



L50 ANSWER 30 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1987:440584 HCAPLUS  
 DN 107:40584  
 TI Chain-extended poly(aryl ether ketones)  
 IN Robeson, Lloyd Mahlon; Winslow, Paul Anthony; Matzner, Markus; Maresca, Louis Michael  
 PA Amoco Corp., USA  
 SO PCT Int. Appl., 49 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8607598	A1	19861231	WO 1986-US902	19860501
	W: JP				
	RW: DE, FR, GB				
	US 4908425	A	19900313	US 1985-747188	19850621
	EP 233192	A1	19870826	EP 1986-903054	19860501
	EP 233192	B1	19901031		
	R: DE, FR, GB				
	JP 63500383	T2	19880212	JP 1986-502507	19860501
	JP 05036452	B4	19930531		
	CA 1276373	A1	19901113	CA 1986-508295	19860502
	US 5120818	A	19920609	US 1989-453782	19891220
PRAI	US 1985-747188	A	19850621		
	WO 1986-US902	W	19860501		

AB The title polymers are prepared by coupling an **oligomeric** poly(aryl ether ketone), prepared by Friedel-Crafts reaction, with a diphenol by nucleophilic polycondensation in the presence of a base. Adding 187.6 g AlCl<sub>3</sub> at 0° to a solution containing 220 mL ClCH<sub>2</sub>CH<sub>2</sub>Cl, 27.2 g p-C<sub>6</sub>H<sub>4</sub>(COCl)<sub>2</sub>, 34.0 g Ph<sub>2</sub>O, 21.3 g p-FC<sub>6</sub>H<sub>4</sub>COCl, and 96.6 g sulfolane and stirring at room temperature for 17 h gave an **oligomer**. Chain-extending 25 g **oligomer** with 4.17 g 4,4'-biphenol in 61 g Ph<sub>2</sub>SO<sub>2</sub> and 30 mL xylene at 120-320° in the presence of 0.16 g K<sub>2</sub>CO<sub>3</sub> and 2.3 g Na<sub>2</sub>CO<sub>3</sub> gave a poly(aryl ether ketone) having viscosity 1.17 dL/g (25°, H<sub>2</sub>SO<sub>4</sub>, 1g/100 mL) and pendulum impact 71 ft-lb/in<sup>3</sup>.

IC ICM C08G061-12  
 ICS C08G065-40; C08L065-00; C08L071-00  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 37

IT Polymerization  
 (of aromatic diols with fluorophenyl-terminated oligo(aryl ether ketones))

IT 109238-08-6P 109238-09-7P 109238-10-0P **109238-21-3P**  
 109238-22-4P 109238-23-5P

RL: **PREP (Preparation)**  
 (manufacture of tough)

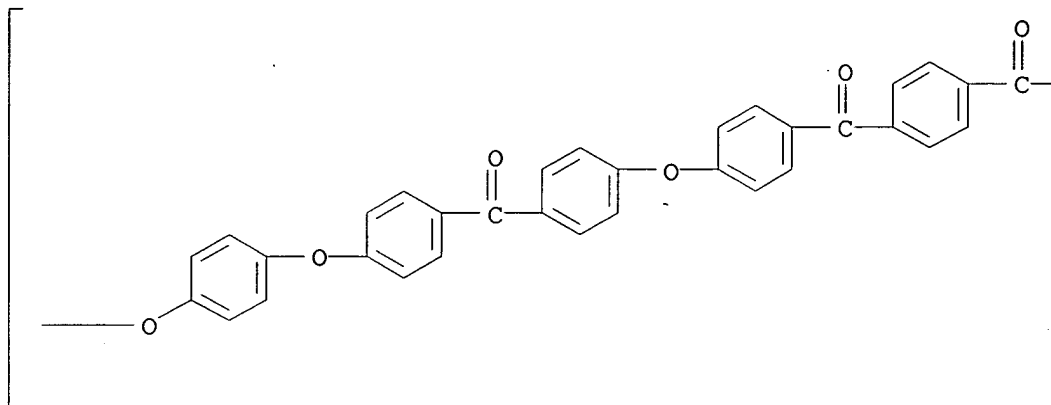
IT 109238-21-3P

RL: PREP (Preparation)  
(manufacture of tough)

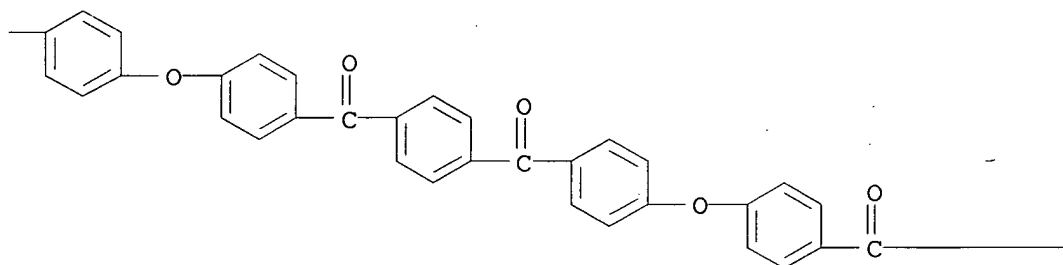
RN 109238-21-3 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylenecarbonyl-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)

PAGE 1-A

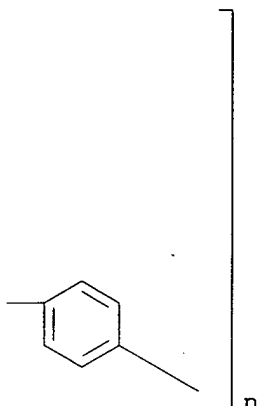


PAGE 1-B





PAGE 1-C



L50 ANSWER 31 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:214908 HCAPLUS

DN 106:214908

TI Block polymers containing a poly(aryl ether ketone)

IN Clendinning, Robert Andrew; Harris, James Elmer; Kelsey, Donal Ross; Matzner, Markus; Robeson, Lloy Mahlon; Winslow, Paul Anthony; Maresca, Louis Michael

PA Amoco Corp., USA

SO PCT Int. Appl., 116 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8606389	A1	19861106	WO 1986-US900	19860501
	W: AU, JP, KR				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	US 4774296	A	19880927	US 1985-729580	19850502
	AU 8658639	A1	19861118	AU 1986-58639	19860501
	AU 600441	B2	19900816		
	EP 221149	A1	19870513	EP 1986-903053	19860501
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 63500384	T2	19880212	JP 1986-502696	19860501
	CN 86103808	A	19870304	CN 1986-103808	19860502
	CA 1267993	A1	19900417	CA 1986-508292	19860502
	US 4891167	A	19900102	US 1988-167034	19880311
PRAI	US 1985-729580	A	19850502		
	WO 1986-US900	A	19860501		

AB Crystalline tough title polymers are prepared from functional group-terminated **oligomers** by a solution polymerization method. Thus, a mixture of 19.28 g terephthaloyl chloride, 1.02 g isophthaloyl chloride, 0.42 g BzCl, 17.25 g Ph<sub>2</sub>O, and 700 mL ClCH<sub>2</sub>CH<sub>2</sub>Cl was treated at <10° with 34.76 g AlCl<sub>3</sub> to prepare a crystalline polymer PhCOZ(OZCOZCOZ)<sub>n</sub>OZOCPh (Z = phenylene) (I) having reduced viscosity 0.58 dL/g (1 g/100 mL H<sub>2</sub>SO<sub>4</sub>). A mixture of 4,4'-difluorobenzophenone 16.35, hydroquinone 8.25, I 5.40, Na<sub>2</sub>CO<sub>3</sub> 7.70, K<sub>2</sub>CO<sub>3</sub> 0.53, and Ph<sub>2</sub>SO<sub>2</sub> 63 g was heated 1 h at 200°, 15 min at 250°, and 1 h at 320° to give a polymer (reduced viscosity 2.16 dL/g; 1 g/100 mL H<sub>2</sub>SO<sub>4</sub>) containing blocks ZCOZOZO and ZCOZCOZO (Z =

phenylene).

IC ICM C08G065-40  
ICS C08L071-00

CC 37-3 (Plastics Manufacture and Processing)

IT Polyoxyphenylenes  
RL: PREP (Preparation)  
(polyketone-, block, preparation of, from **oligomers** and monomers in solution)

IT Polyketones  
RL: PREP (Preparation)  
(polyoxyphenylene-, block, preparation of, from **oligomers** and monomers in solution)

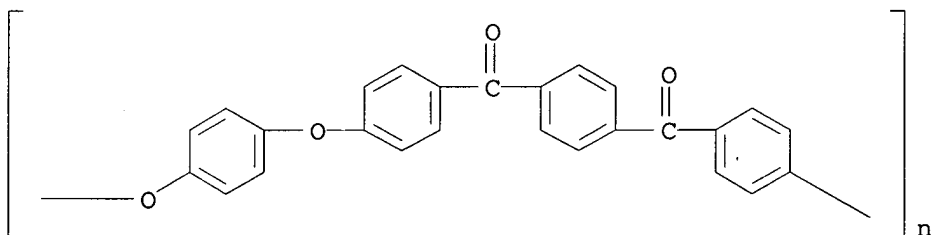
IT 108454-73-5P, 4,4'-Difluorobenzophenone-diphenyl ether-hydroquinone isophthaloyl chloride-terephthaloyl chloride block copolymer  
108454-74-6P, 1,4-Bis(p-fluorobenzoyl)benzene-4,4'-difluorobenzophenone-hydroquinone block copolymer 108454-75-7P, 1,4-Bis(4-fluorobenzoyl)benzene-diphenyl ether-hydroquinone-isophthaloyl chloride-terephthaloyl chloride block copolymer 108454-77-9P  
RL: PREP (Preparation)  
(manufacture of, from **oligomers** and monomers, in solution)

IT 25917-05-9DP, Diphenyl ether-isophthaloyl chloride-terephthaloyl chloride copolymer, benzoyl derivs. 30604-15-0DP, Diphenyl ether-terephthaloyl chloride copolymer, fluorobenzoyl derivs. **60015-03-4P**  
74970-25-5DP, Diphenyl ether-terephthaloyl chloride copolymer, SRU, fluorobenzoyl derivs. 105451-78-3P, 1,4-Bis(p-fluorobenzoyl)benzene-hydroquinone copolymer 108528-63-8P, Difluorobenzophenone-hydroquinone copolymer 108568-51-0P, Difluorobenzophenone-hydroquinone copolymer, SRU 108568-52-1DP, Diphenyl ether-isophthaloyl chloride-terephthaloyl chloride copolymer, SRU, benzoyl derivs.  
RL: **PREP (Preparation)**  
(**oligomeric**, preparation and reaction with chain extenders)

IT **60015-03-4P**  
RL: **PREP (Preparation)**  
(**oligomeric**, preparation and reaction with chain extenders)

RN 60015-03-4 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenecarbonyl-1,4-phenylenecarbonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



L50 ANSWER 32 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:87201 HCAPLUS

DN 106:87201

TI Nitrated aryl ethers and their polymers as explosives and propellants

IN Hagel, Rainer; Redecker, Klaus

PA Dynamit Nobel A.-G., Fed. Rep. Ger.

SO U.S., 5 pp. Cont. of U.S. Ser. No. 477,424, abandoned.  
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4620046	A	19861028	US 1985-748027	19850624
PRAI	US 1983-477424		19830321		

OS CASREACT 106:87201

AB Nucleus-nitrated aryl ethers (I), which are **oligomeric** or polymeric and suitable as explosive or propellant charges are produced by reacting aromatic halogen-containing nitro compds. with an aromatic hydroxy compound.

which may be nitrated in the presence of a base. Picryl chloride 495 and pyrocatechine 121 g were dissolved in 1 L acetone and added, dropwise with vigorous stirring under boiling temps. to 88 g NaOH in water (1:1), stirred 15 min., and treated dropwise with 4 L water. Separation by water and washing with EtOH gave 346 g 1,2-bis-(2',4',6'-trinitrophenoxy)benzene (II) (65% of theor.) with flow point 235-238°, deflagration point 320°, friction sensitivity >350 N, percussion sensitivity 8 J, and heat of explosion 2850 J/g.

IC ICM C07C079-10

NCL 568930000

CC 50-1 (Propellants and Explosives)

IT 81105-60-4DP, nitrated 81105-60-4P 81105-65-9DP, nitrated  
81105-65-9P 81105-66-0DP, nitrated 81105-66-0P **90692-15-2P**  
**90692-16-3DP**, nitrated **90692-16-3P 90692-17-4DP**  
, nitrated **90692-17-4P 90692-18-5P**  
**90692-19-6DP**, nitrated **90692-19-6P 90692-20-9DP**  
, nitrated **90692-20-9P** 90706-00-6DP, nitrated 90706-00-6P  
90706-01-7P 90706-02-8DP, nitrated 90706-02-8P 90739-51-8DP,  
nitrated 90739-51-8P

RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)

(synthesis of, for explosive and propellants)

IT **90692-15-2P 90692-16-3DP**, nitrated **90692-16-3P**  
**90692-17-4DP**, nitrated **90692-17-4P 90692-18-5P**  
**90692-19-6DP**, nitrated **90692-19-6P 90692-20-9DP**  
, nitrated **90692-20-9P**

RL: RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)

(synthesis of, for explosive and propellants)

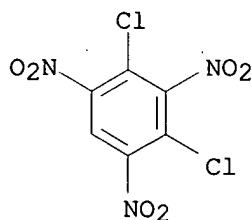
RN 90692-15-2 HCAPLUS

CN 1,3-Benzenediol, polymer with 2,4-dichloro-1,3,5-trinitrobenzene (9CI)  
(CA INDEX NAME)

CM 1

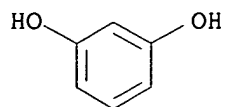
CRN 1630-09-7

CMF C6 H Cl2 N3 O6



CM 2

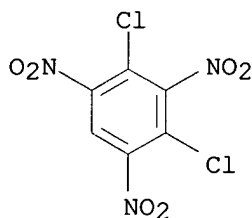
CRN 108-46-3  
CMF C6 H6 O2



RN 90692-16-3 HCAPLUS  
CN 1,4-Benzenediol, polymer with 2,4-dichloro-1,3,5-trinitrobenzene (9CI)  
(CA INDEX NAME)

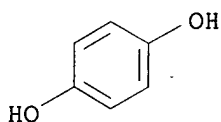
CM 1

CRN 1630-09-7  
CMF C6 H C12 N3 O6



CM 2

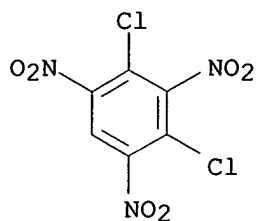
CRN 123-31-9  
CMF C6 H6 O2



RN 90692-16-3 HCAPLUS  
CN 1,4-Benzenediol, polymer with 2,4-dichloro-1,3,5-trinitrobenzene (9CI)  
(CA INDEX NAME)

CM 1

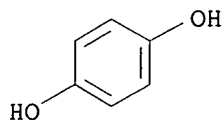
CRN 1630-09-7  
CMF C6 H C12 N3 O6



CM 2

CRN 123-31-9

CMF C6 H6 O2



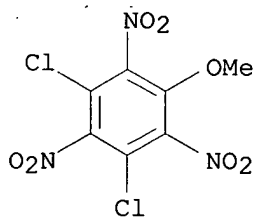
RN 90692-17-4 HCAPLUS

CN 1,4-Benzenediol, polymer with 1,3-dichloro-5-methoxy-2,4,6-trinitrobenzene  
(9CI) (CA INDEX NAME)

CM 1

CRN 50903-10-1

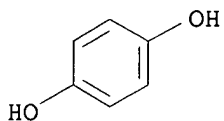
CMF C7 H3 Cl2 N3 O7



CM 2

CRN 123-31-9

CMF C6 H6 O2



RN 90692-17-4 HCAPLUS

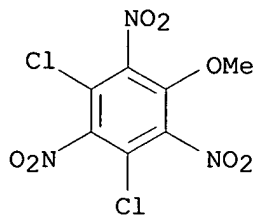
CN 1,4-Benzenediol, polymer with 1,3-dichloro-5-methoxy-2,4,6-trinitrobenzene

(9CI) (CA INDEX NAME)

CM 1

CRN 50903-10-1

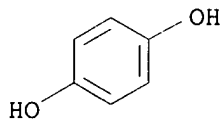
CMF C7 H3 Cl2 N3 O7



CM 2

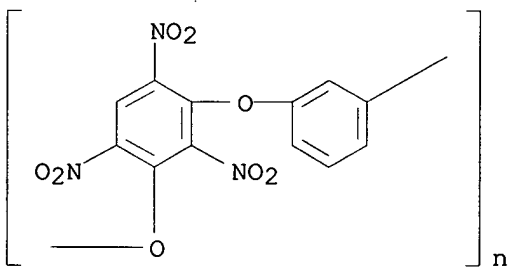
CRN 123-31-9

CMF C6 H6 O2



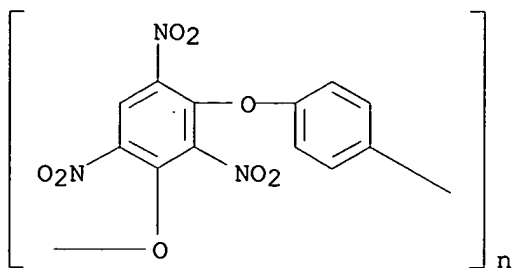
RN 90692-18-5 HCAPLUS

CN Poly[oxy(2,4,6-trinitro-1,3-phenylene)oxy-1,3-phenylene] (9CI) (CA INDEX NAME)

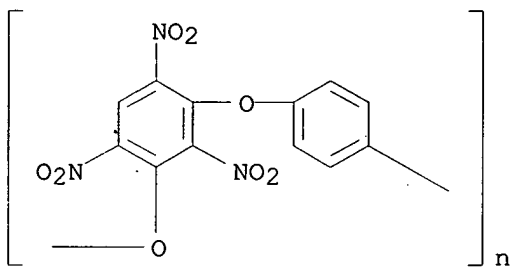


RN 90692-19-6 HCAPLUS

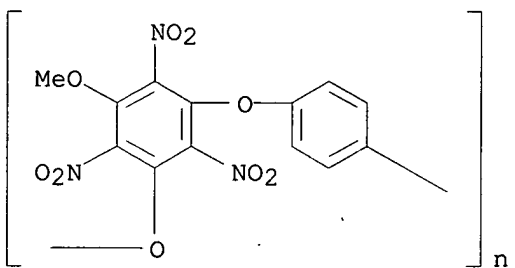
CN Poly[oxy(2,4,6-trinitro-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



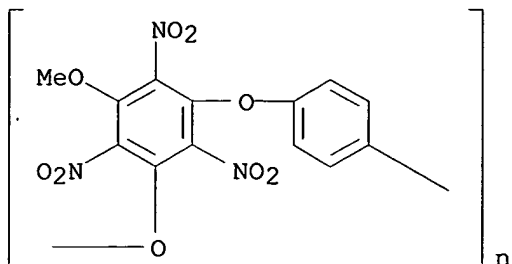
RN 90692-19-6 HCAPLUS  
 CN Poly[oxy(2,4,6-trinitro-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 90692-20-9 HCAPLUS  
 CN Poly[oxy(5-methoxy-2,4,6-trinitro-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 90692-20-9 HCAPLUS  
 CN Poly[oxy(5-methoxy-2,4,6-trinitro-1,3-phenylene)oxy-1,4-phenylene] (9CI) (CA INDEX NAME)

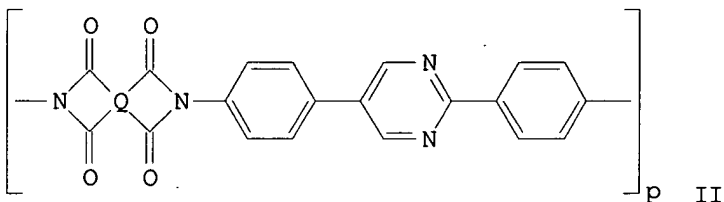


L50 ANSWER 33 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1986:407032 HCAPLUS  
 DN 105:7032  
 TI 2,5-Bis(4-aminophenyl)pyrimidine as monomer for synthesis of polyimides  
 useful as heat-resistant materials  
 IN Mamaev, V. P.; Borovik, V. P.; Koton, M. M.; Nekrasova, E. M.  
 PA Novosibirsk Institute of Organic Chemistry, USSR  
 SO U.S.S.R.  
 From: Otkrytiya, Izobret. 1985, (44), 271.  
 CODEN: URXXAF

DT Patent  
 LA Russian

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 858316	A1	19851130	SU 1979-2854029	19791217
PRAI	SU 1979-2854029		19791217		
GI					



AB The title compound (I) is prepared for use in the manufacture of heat-resistant polyimides II [Q = 1,2,4,5-C6H2 or 1,3-(3,4-C6H3O)2C6H4, p = 75-120. Heating 1-dimethylamino-3-dimethylamino-2-(4-nitrophenyl)-1-propene perchlorate with p-bromobenzamidine hydrochloride at 1:(1.5-1.7) molar ratios resp., in MeOH-MeONa mixts., aminating (25-30%) 2-(4-bromophenyl)-5-(4-nitrophenyl)pyrimidine with aqueous NH3 in dioxane at 150-160° in the presence of CuBr and NH2OH.HSO4, heating the resulting 2-(4-aminophenyl)-5-(4-nitrophenyl)pyrimidine with Fe in HOAc, and deacetylating the resulting 2,5-bis(4-acetamidophenyl)pyrimidine by HCl gave I.  
 ICM C07D239-04  
 ICS C08G073-10  
 CC 35-5 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 28  
 IT 102570-65-0P 102570-66-1P



RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of heat-resistant)

IT 102570-66-1P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of heat-resistant)

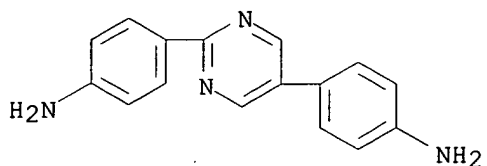
RN 102570-66-1 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, 4,4'-[1,3-phenylenebis(oxy)]bis-, polymer  
with 4,4'-(2,5-pyrimidinediyl)bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 102570-64-9

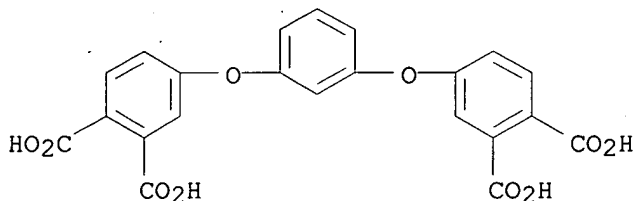
CMF C16 H14 N4



CM 2

CRN 18959-91-6

CMF C22 H14 O10



L50 ANSWER 34 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1986:34417 HCAPLUS

DN 104:34417

TI The effect of water on the formation of poly(aryl ether)  
s via phase-transfer-catalyzed nucleophilic aromatic substitution

AU Gerbi, Diana J.; Dimotsis, George; Morgan, Janet L.; Williams, Robert F.;  
Kellman, Raymond

CS Div. Earth Phys. Sci., Univ. Texas, San Antonio, TX, 78285, USA

SO Journal of Polymer Science, Polymer Letters Edition (1985), 23(11), 551-6  
CODEN: JPYBAN; ISSN: 0360-6384

DT Journal

LA English

AB The effect of water in the polymerization of hexafluorobenzene (I) with  
bisphenol

A (II) and the polymerization of 4,4'-dichlorodiphenyl sulfone (III) with II in  
the presence of 18-crown-6 [17455-13-9] as phase-transfer catalyst was  
studied. The optimal water concentration in AcNMe2-PhMe in the preparation of

II-III

copolymer [25135-51-7] occurred at water-catalyst ratio 0.20. The

optimal ratio of water to catalyst in the preparation of I-II copolymer [86019-07-0] in AcNMe<sub>2</sub> and Me<sub>2</sub>CO was 1.7 and 2.3, resp. In PhCl, I-II copolymer was not formed owing to the insoly. of the polymer product; however, the yield of **oligomer** was greater when the water-catalyst ratio was 0.7. This indicated that crown and phenolate ion were associated in PhCl solution in the presence of water.

CC 35-7 (Chemistry of Synthetic High Polymers)

IT 25135-51-7P 25154-01-2P 81843-68-7P **86019-07-0P**

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(preparation of, in presence of 18-crown-6 catalyst, water effect on)

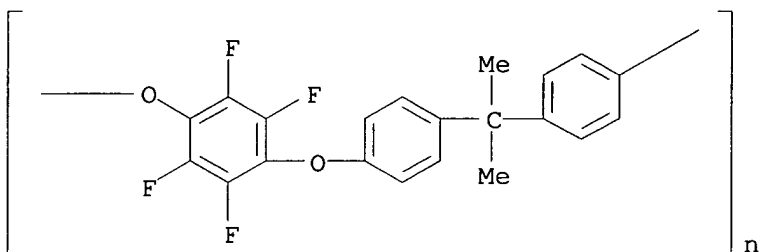
IT **86019-07-0P**

RL: **SPN (Synthetic preparation); PREP (Preparation)**

(preparation of, in presence of 18-crown-6 catalyst, water effect on)

RN 86019-07-0 HCAPLUS

CN Poly[oxy(2,3,5,6-tetrafluoro-1,4-phenylene)oxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



L50 ANSWER 35 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:578986 HCAPLUS

DN 103:178986

TI Synthesis of bisphenol-based acetylene-terminated thermosetting resins

AU Wallace, J. S.; Arnold, F. E.; Feld, W. A.

CS Air Force Wright Aeronaut. Lab., Wright-Patterson Air Force Base, OH, 45433, USA

SO ACS Symposium Series (1985), 282(React. Oligomers), 17-29

CODEN: ACSMC8; ISSN: 0097-6156

DT Journal

LA English

AB The title resins were prepared by treating 4 mol 4,4'-dichlorodiphenyl sulfone [80-07-9] and 4,4'-difluorodiphenyl sulfone [383-29-9] with 1 mol bisphenol such as 4,4'-isopropylidenediphenol [80-05-7], 4,4'-thiodiphenol [2664-63-3], hydroquinone [123-31-9], and resorcinol [108-46-3], endcapping the halo-terminated products with 4-(m-hydroxyphenyl)-2-methyl-3-butyne-2-ol [90684-07-4], and cleaving the acetone terminal groups to give free ethynyl functionalities. The acetylene-terminated products were cured at 288° for 8 h in air. Glass temps. of the cured and uncured products were measured. Thermo-oxidative stability of the resins was evaluated by isothermal aging in air at 315° for 200 h.

CC 37-3 (Plastics Manufacture and Processing)

IT 82200-19-9 90637-06-2 90637-07-3

RL: **USES (Uses)**

**(oligomeric)**

IT 25135-51-7P 25135-51-7P 25154-01-2P 25608-64-4P 25839-81-0P

25839-81-0P 28555-79-5P 30776-33-1P 30776-33-1P 41209-98-7P

69777-44-2P **69794-32-7P 69794-32-7P** 98731-80-7P

98731-81-8P 98731-82-9P

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(oligomeric, preparation and reaction with  
hydroxyphenylmethylbutynol)

IT 98716-49-5P **98716-50-8P** 98731-78-3P 98731-79-4P

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(oligomeric, preparation and reaction with potassium hydroxide)

IT 90684-07-4P

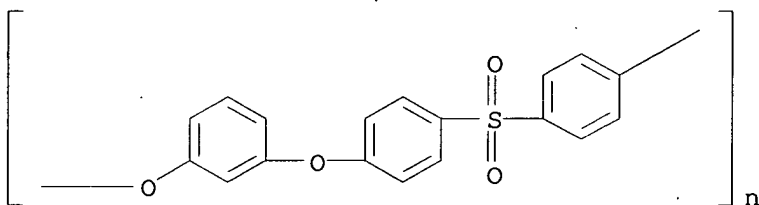
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and reaction of, with halogen-terminated **aryl**  
**ether sulfone oligomers**)

IT **69794-32-7P**

RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(oligomeric, preparation and reaction with  
hydroxyphenylmethylbutynol)

RN 69794-32-7 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene) (9CI) (CA  
INDEX NAME)

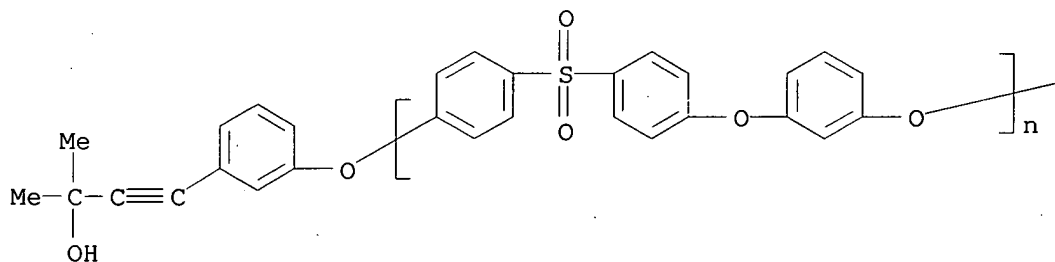


IT **98716-50-8P**

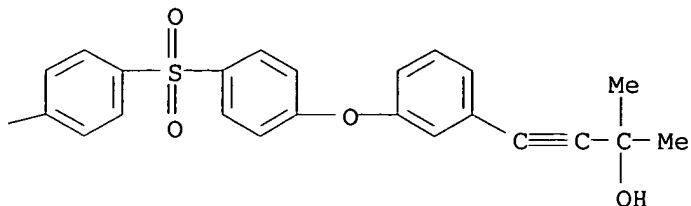
RL: **SPN (Synthetic preparation); PREP (Preparation)**  
(oligomeric, preparation and reaction with potassium hydroxide)

RN 98716-50-8 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene),  
 $\alpha$ -[4-[[4-[3-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenyl]sulfonyl]ph  
enyl]- $\omega$ -[3-(3-hydroxy-3-methyl-1-butynyl)phenoxy]- (9CI) (CA INDEX  
NAME)



PAGE 1-A



- L50 ANSWER 36 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1985:561197 HCAPLUS  
 DN 103:161197  
 TI **Arylether sulfone oligomers** with acetylene termination  
 from the Ullmann ether reaction  
 AU Lindley, P. M.; Picklesimer, L. G.; Evans, B.; Arnold, F. E.; Kane, J. J.  
 CS Air Force Wright Aeronaut. Lab., Wright-Patterson Air Force Base, OH,  
 45433, USA  
 SO ACS Symposium Series (1985), 282(React. Oligomers), 31-42  
 CODEN: ACSMC8; ISSN: 0097-6156  
 DT Journal  
 LA English  
 AB Acetylene-terminated **oligomeric aryl ether**  
 sulfones (I) which gave high-mol.-weight polymers upon curing were prepared via  
 4-steps reaction sequences. High-mol.-weight diols were prepared using  
 nucleophilic aromatic substitution of 4,4'-dichlorodiphenyl sulfone  
 [80-07-9] with various diols such as resorcinol [108-46-3], hydroquinone  
 [123-31-9], bisphenol A [80-05-7], 4,4'-dihydroxybiphenyl [92-88-6], and  
 4,4'-thiodiphenol [2664-63-3]. The high-mol.-weight diols were treated with  
 excess C<sub>6</sub>H<sub>4</sub>Br<sub>2</sub> through the Ullmann ether reaction to give  
 bromine-endcapped **aryl ether** sulfones, which were  
 treated with acetylene to give I. The glass temps. of these products  
 before and after curing were studied.  
 CC 37-3 (Plastics Manufacture and Processing)  
 ST chlorodiphenyl sulfone reaction diol; resorcinol reaction chlorodiphenyl  
 sulfone; hydroquinone reaction chlorodiphenyl sulfone; bisphenol reaction  
 chlorodiphenyl sulfone; dihydroxybiphenyl reaction chlorodiphenyl sulfone;  
 thiodiphenol reaction chlorodiphenyl sulfone; acetylene terminated  
**aryl ether** sulfone; bromobenzene Ullmann ether reaction  
 diol  
 IT Glass temperature and transition  
 (of acetylene-terminated **aryl ether** sulfone  
 oligomers)  
 IT 98745-86-9P 98745-87-0P 98745-88-1P  
 98774-36-8P 98798-54-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (oligomeric, preparation and glass temperature of)  
 IT 98716-39-3P 98716-51-9P 98716-52-0P  
 98716-53-1P 98774-35-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (oligomeric, preparation and reaction of, with methylbutynol)  
 IT 25135-51-7P 25154-01-2P 25608-64-4P 25702-83-4P 25839-81-0P  
 28212-68-2P 69777-44-2P 69794-32-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (oligomeric, preparation and reaction with dibromobenzene)  
 IT 98745-81-4P 98745-82-5P 98745-83-6P

98745-84-7P 98745-85-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(oligomeric, preparation of, for acetylene-terminated aryl  
ether sulfone oligomers)

IT 115-19-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bromine-terminated aryl ether  
sulfone oligomers)

IT 98745-86-9P 98745-87-0P 98745-88-1P

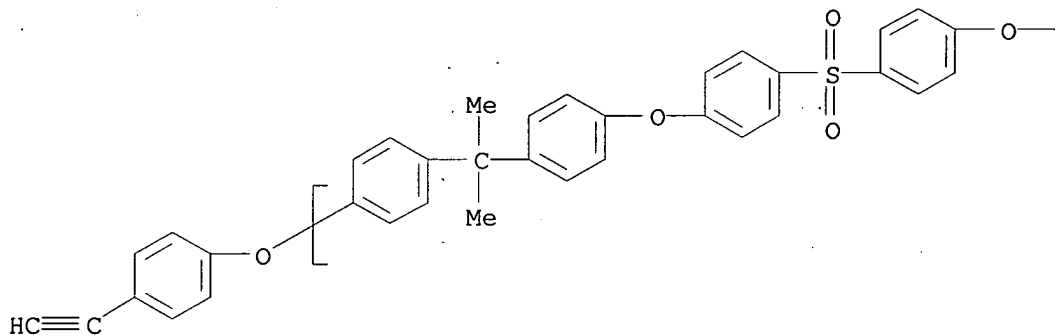
98774-36-8P 98798-54-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(oligomeric, preparation and glass temperature of)

RN 98745-86-9 HCAPLUS

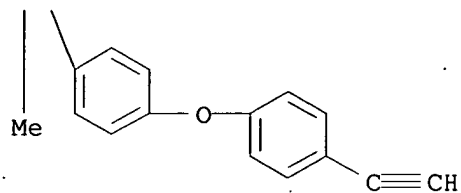
CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-  
phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-  
methylethylidene)-1,4-phenylene],  $\alpha$ -[4-[1-[4-[4-[4-[4-[1-[4-(4-  
ethynylphenoxy)phenyl]-1-methylethyl]phenoxy]phenyl]sulfonyl]phenoxy]pheny  
l]-1-methylethyl]phenyl]- $\omega$ -(4-ethynylphenoxy)- (9CI) (CA INDEX  
NAME)

PAGE 1-A



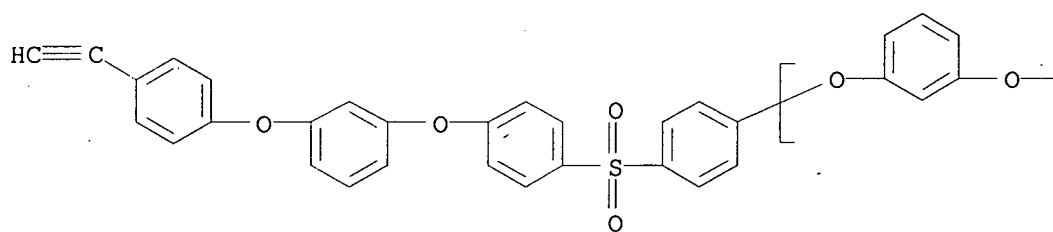


PAGE 2-C

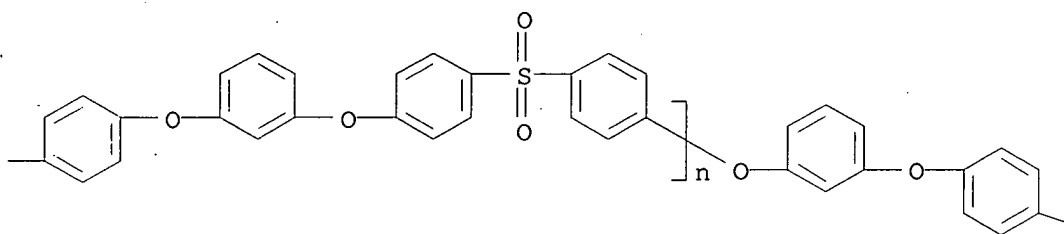


RN 98745-87-0 HCAPLUS  
 CN Poly(oxy-1,3-phenyleneoxy-1,4-phenyleneoxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene),  $\alpha$ -[4-[[4-[3-(4-ethynylphenoxy)phenoxy]phenyl]sulfonyl]phenyl]- $\omega$ -[3-(4-ethynylphenoxy)phenoxy]- (9CI) (CA INDEX NAME)

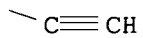
PAGE 1-A



PAGE 1-B

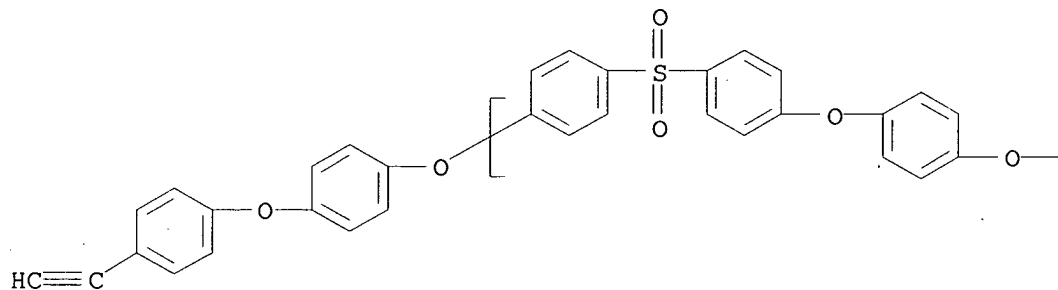


PAGE 1-C



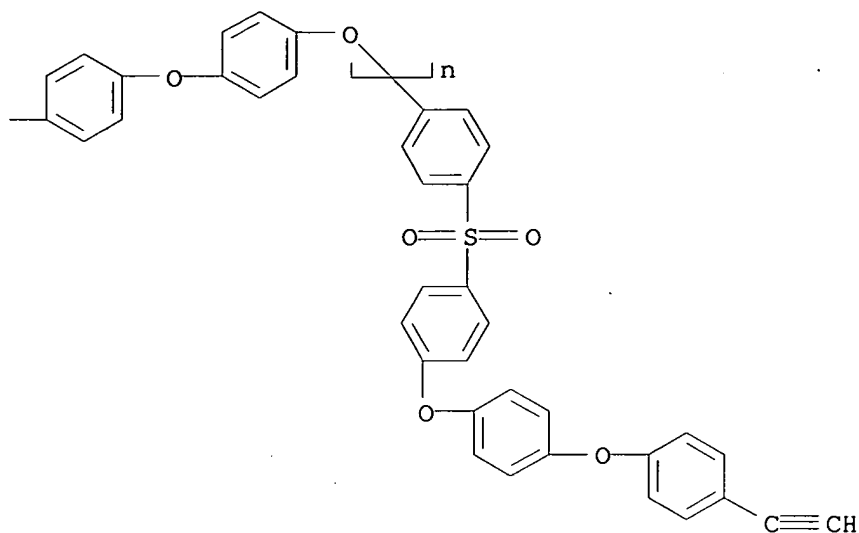
RN 98745-88-1 HCAPLUS  
CN Poly(oxy-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene),  $\alpha$ -[4-[[4-[4-(4-ethynylphenoxy)phenoxy]phenyl]sulfonyl]phenyl]- $\omega$ -[4-(4-ethynylphenoxy)phenoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



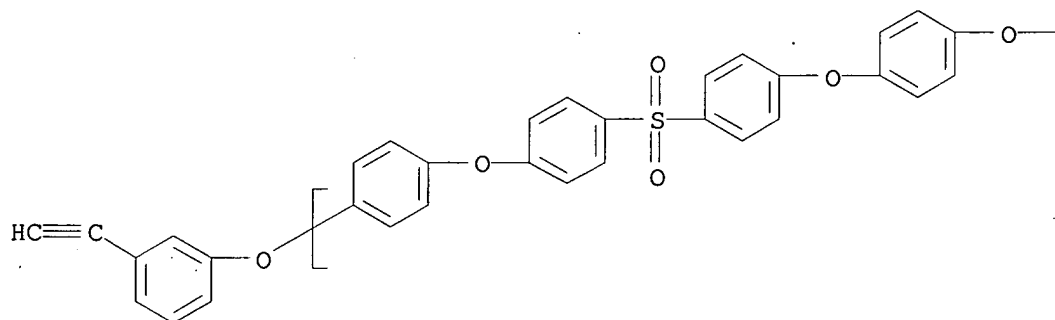


PAGE 1-B

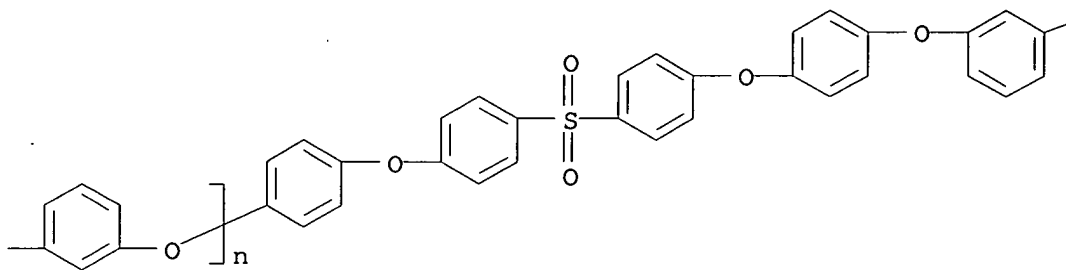


RN 98774-36-8 HCAPLUS  
 CN Poly(oxy-1,3-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene),  $\alpha$ -[4-[4-[[4-[4-(3-ethynylphenoxy)phenoxy]phenyl]sulfonyl]phenoxy]phenyl]- $\omega$ -(3-ethynylphenoxy)- (9CI) (CA INDEX NAME)

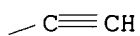
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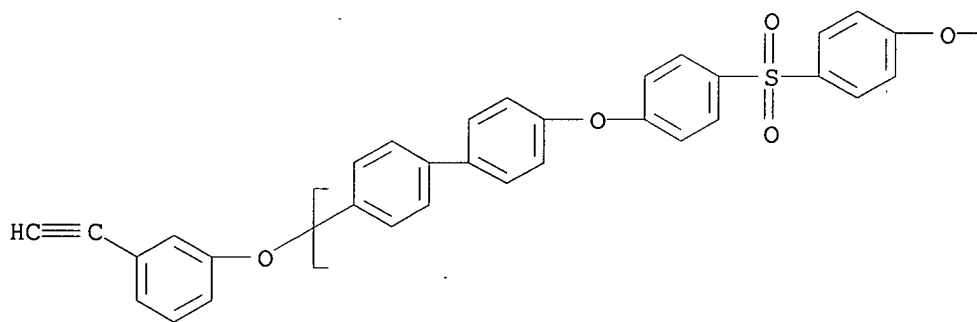
PAGE 1-C



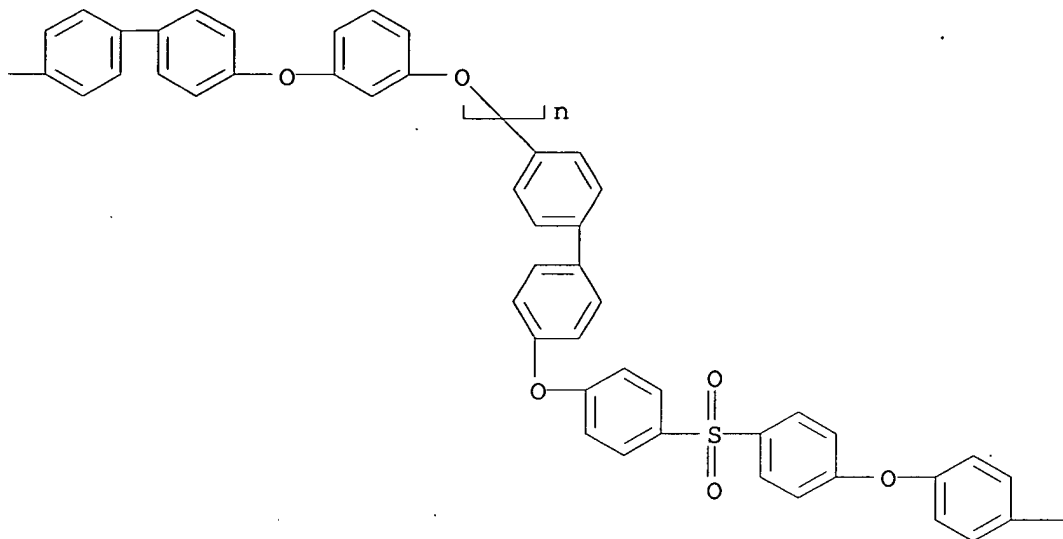
RN 98798-54-0 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl-1,4-phenylenesulfonyl-1,4-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl),  
 $\alpha$ -[4'-[4-[[4'-[(3-ethynylphenoxy)[1,1'-biphenyl]-4-yl]oxy]phenyl]sulfonyl]phenoxy][1,1'-biphenyl]-4-yl]- $\omega$ -(3-ethynylphenoxy)- (9CI) (CA INDEX NAME)

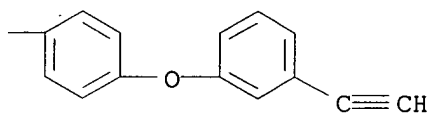
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IT 98716-39-3P 98716-51-9P 98716-52-0P  
98716-53-1P 98774-35-7P

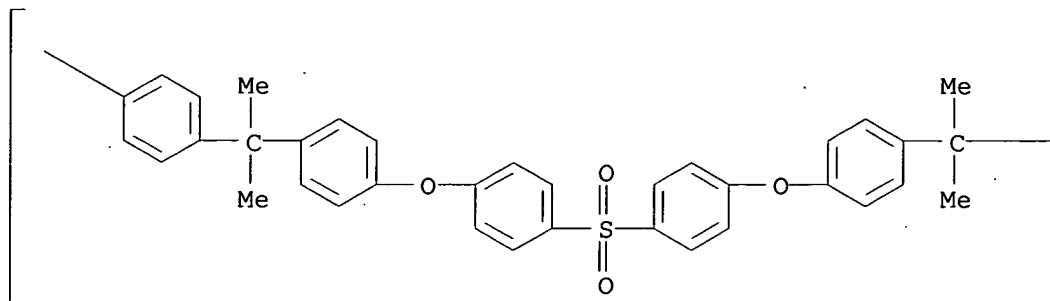
RL: SPN (Synthetic preparation); PREP (Preparation)  
(oligomeric, preparation and reaction of, with methylbutynol)

RN 98716-39-3 HCAPLUS

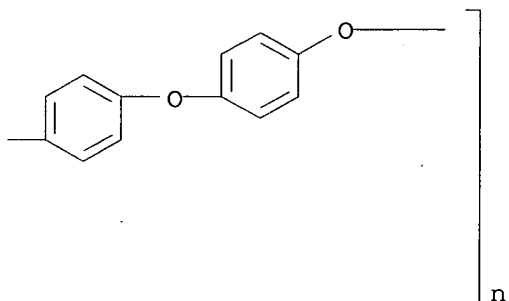
CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-

methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)

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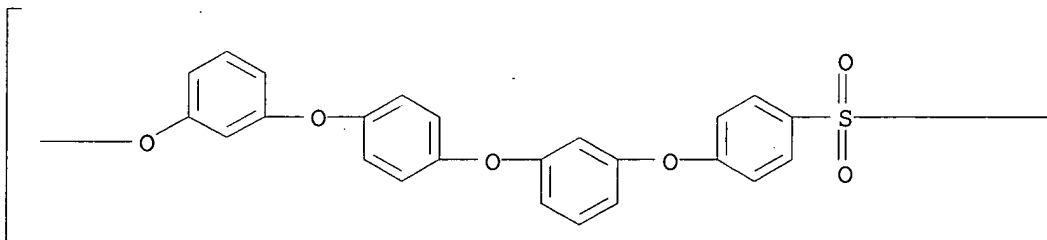
PAGE 1-B



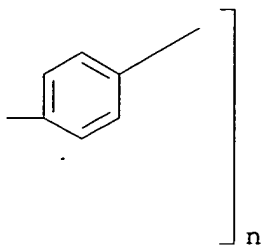
RN 98716-51-9 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenyleneoxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene) (9CI) (CA INDEX NAME)

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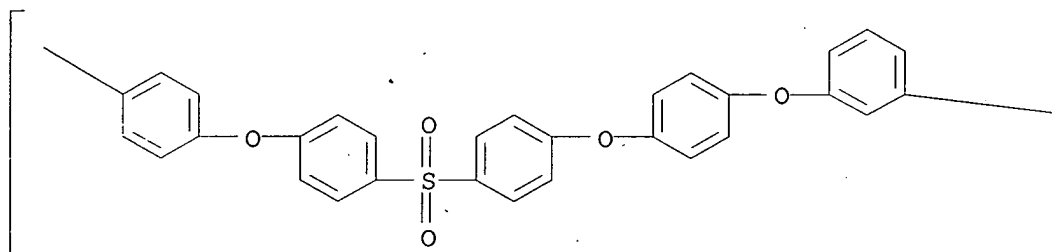


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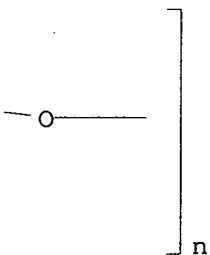


RN 98716-52-0 HCAPLUS  
 CN Poly(oxy-1,3-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene) (9CI) (CA INDEX NAME)

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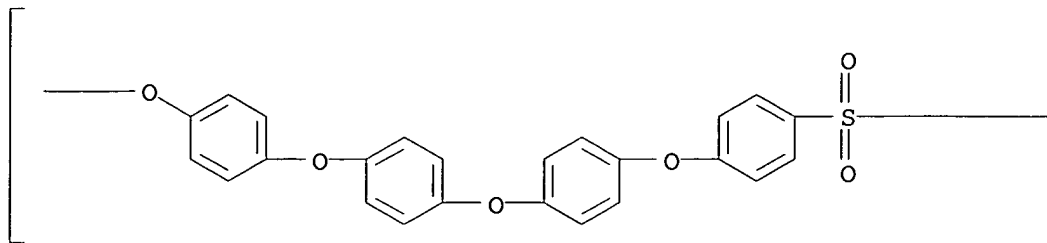


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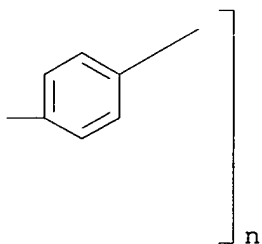


RN 98716-53-1 HCAPLUS  
 CN Poly(oxy-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene) (9CI) (CA INDEX NAME)

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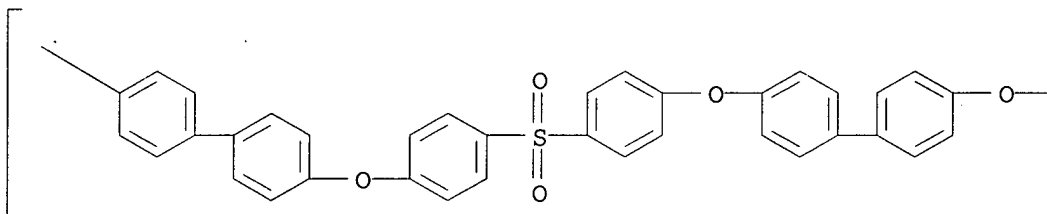


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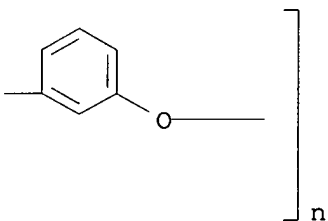


RN 98774-35-7 HCAPLUS  
 CN Poly(oxy-1,3-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl-1,4-phenylenesulfonyl-1,4-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl) (9CI) (CA INDEX NAME)

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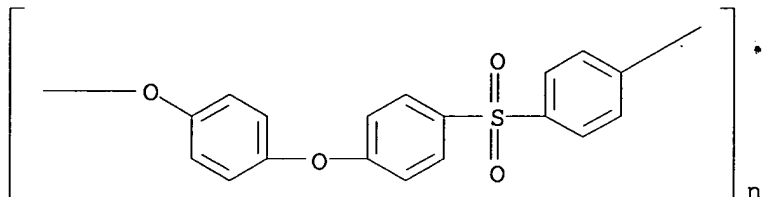


IT 28212-68-2P 69794-32-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)

(oligomeric, preparation and reaction with dibromobenzene)

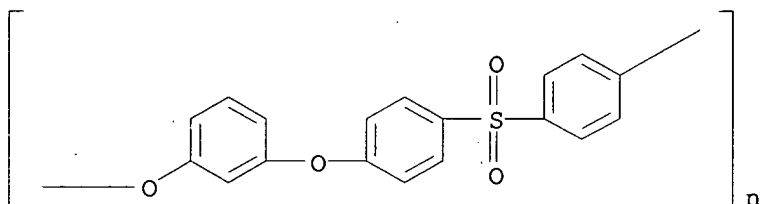
RN 28212-68-2 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



RN 69794-32-7 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene) (9CI) (CA INDEX NAME)



IT 98745-81-4P 98745-82-5P 98745-83-6P

98745-84-7P 98745-85-8P

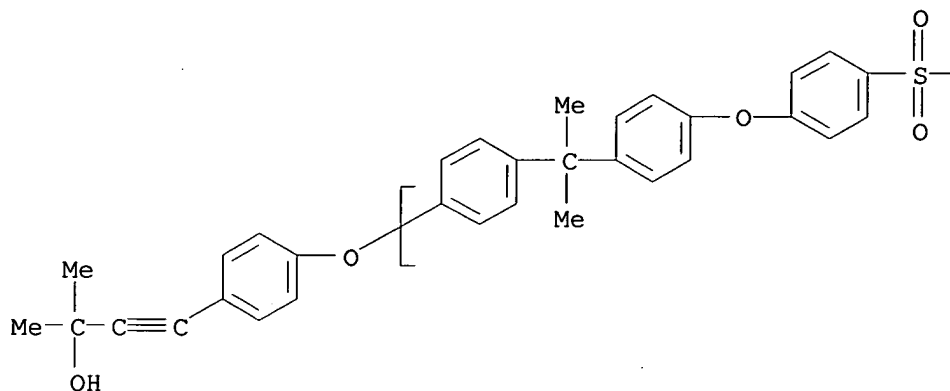
RL: SPN (Synthetic preparation); PREP (Preparation)

(oligomeric, preparation of, for acetylene-terminated aryl ether sulfone oligomers)

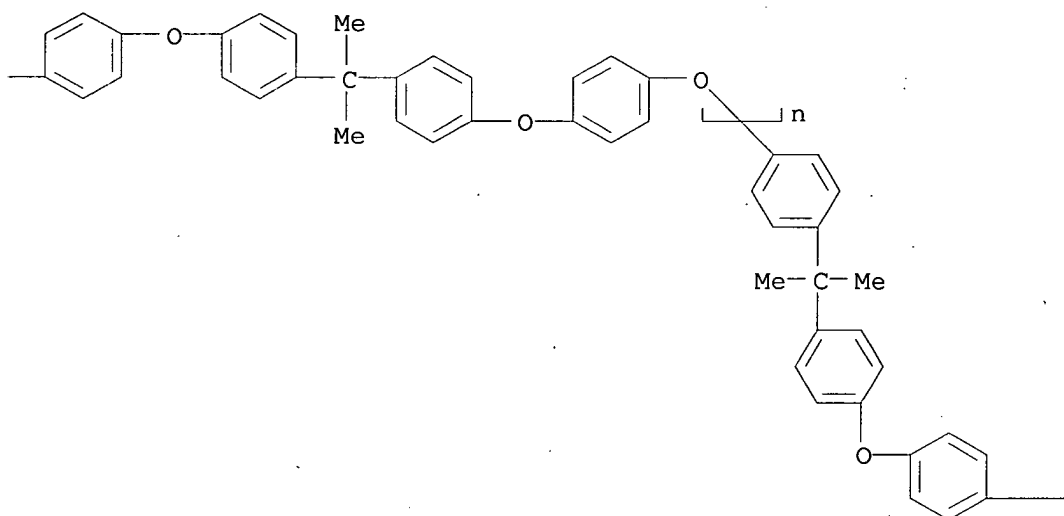
RN 98745-81-4 HCAPLUS

CN Poly[oxy-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene],  $\alpha$ -[4-[1-[4-[4-[4-[4-[1-[4-[4-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenyl]-1-methylethyl]phenoxy]phenyl]sulfonyl]phenoxy]phenyl]-1-methylethyl]phenyl]- $\omega$ -[4-(3-hydroxy-3-methyl-1-butynyl)phenoxy]- (9CI) (CA INDEX NAME)

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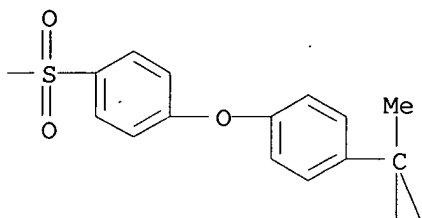


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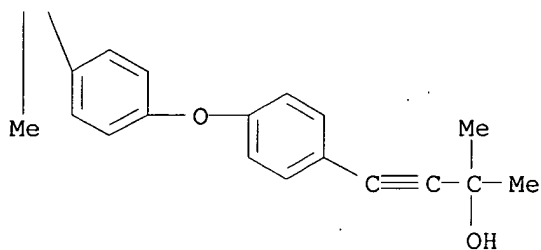




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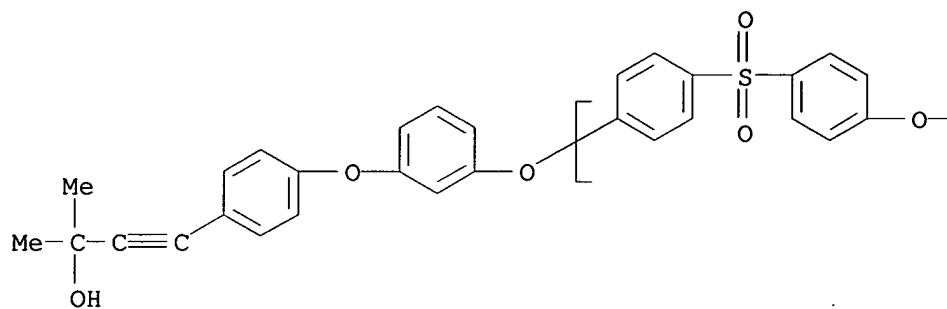
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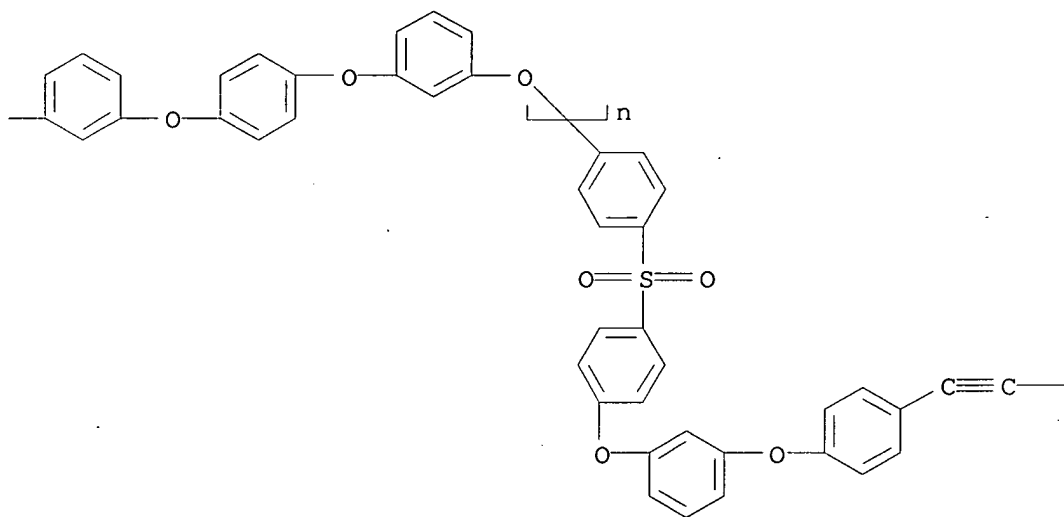
RN 98745-82-5 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenyleneoxy-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene), α-[4-[[4-[3-[4-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenoxy]phenyl]sulfonyl]phenyl]-ω-[3-[4-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenoxy]- (9CI) (CA INDEX NAME)

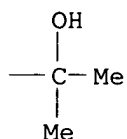
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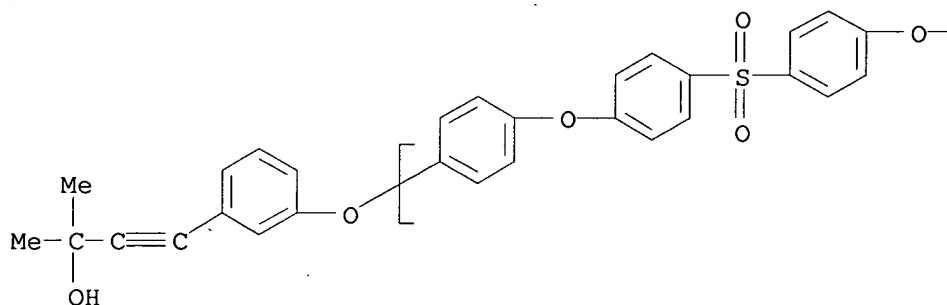
PAGE 1-C



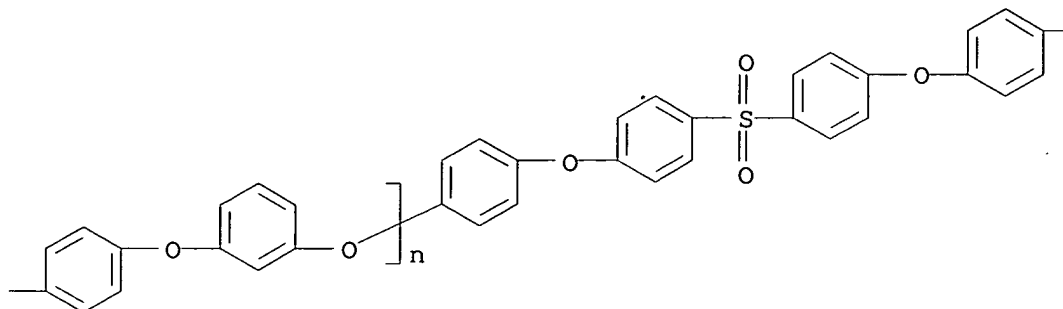
RN 98745-83-6 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene),  $\alpha$ -[4-[4-[[4-[4-[3-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenoxy]phenyl]sulfonyl]phenoxy]phenyl]- $\omega$ -[3-(3-hydroxy-3-methyl-1-butynyl)phenoxy]- (9CI) (CA INDEX NAME)

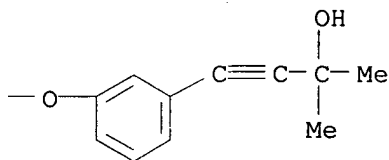
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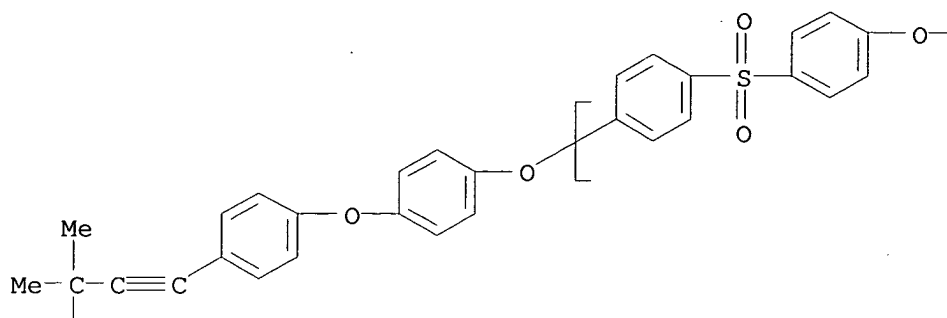
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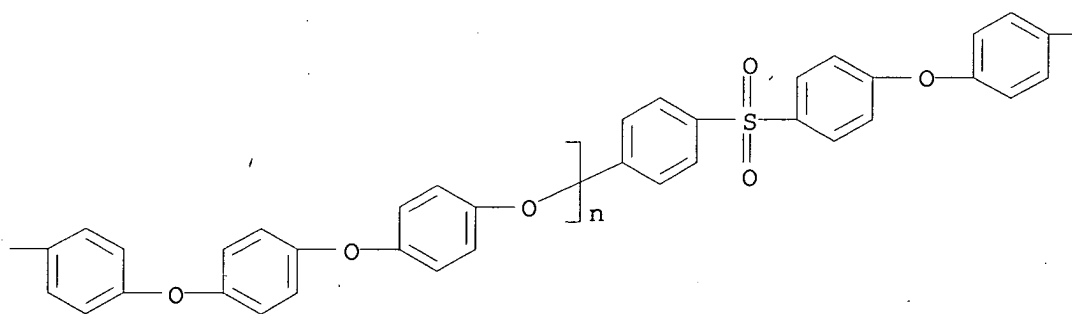
RN 98745-84-7 HCAPLUS

CN Poly(oxy-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenylene),  $\alpha$ -[4-[[4-[4-[4-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenoxy]phenyl]sulfonyl]phenyl]- $\omega$ -[4-[4-(3-hydroxy-3-methyl-1-butynyl)phenoxy]phenoxy]- (9CI) (CA INDEX NAME)

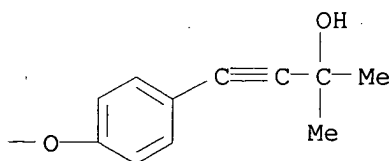
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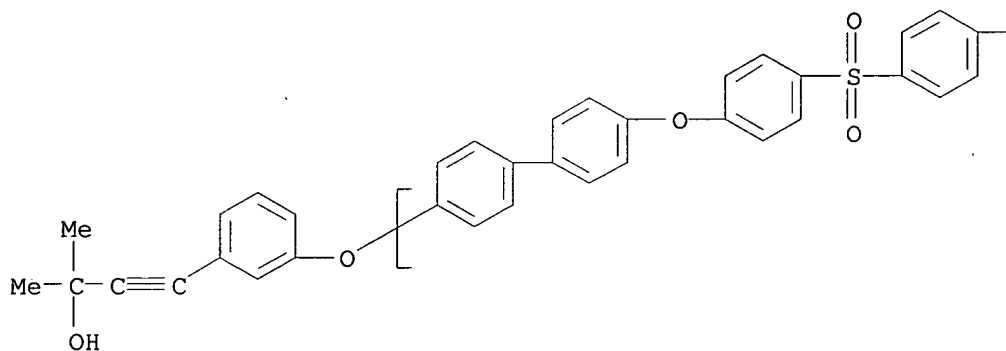
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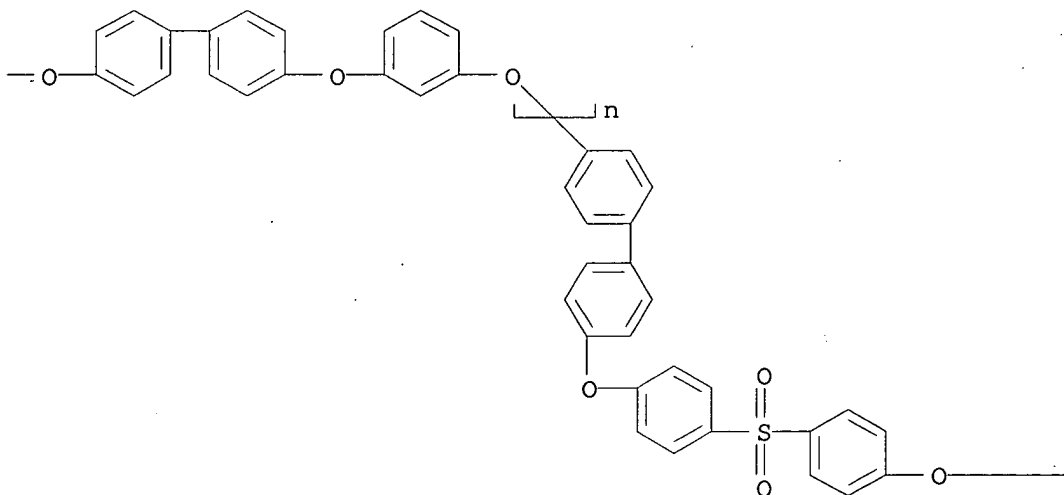
RN 98745-85-8 HCAPLUS

CN Poly(oxy-1,3-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl)oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl),  
 $\alpha$ -[4'-[4-[4-[4'-[3-(3-hydroxy-3-methyl-1-butynyl)phenoxy][1,1'-biphenyl]-4-yl]oxy]phenyl]sulfonyl]phenoxy[1,1'-biphenyl]-4-yl]- $\omega$ -[3-(3-hydroxy-3-methyl-1-butynyl)phenoxy]- (9CI) (CA INDEX NAME)

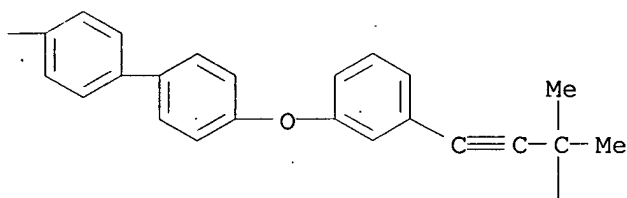
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OH

L50 ANSWER 37 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1984:424058 HCAPLUS  
 DN 101:24058  
 TI Synthesis and properties of acetylene terminated **aryl-ether oligomers**  
 AU Reinhardt, B. A.; Loughran, G. A.; Arnold, F. E.; Soloski, E. J.  
 CS Mater. Lab., Air Force Wright Aeronaut. Lab., Wright-Patterson AFB, OH, 45433, USA  
 SO Polymer Science and Technology (Plenum) (1984), 25(New Monomers Polym.), 29-40  
 CODEN: POSTB5; ISSN: 0093-6286  
 DT Journal  
 LA English  
 AB The title **oligomers** were prepared treating aromatic diols with m-dibromobenzene to give a series of Br end-capped **aryl-ether oligomers** which were treated with 2-methyl-3-butyn-2-ol to give bisbutynol adducts which were subjected to hydrolytic displacement of acetone with KOH in PhMe. The products were obtained as mixts. of monomers and **oligomers** and were separated by column chromatog. All materials in the amorphous state had glass temps. below room temperature The thermal oxidation properties of the products were excellent, exceeding the 300-350°F requirement needed to make this system a substitute for epoxy resins.  
 CC 35-7 (Chemistry of Synthetic High Polymers)

ST acetylene terminated **aryl ether oligomer**;  
heat resistant **aryl ether oligomer**

IT Heat-resistant materials  
(crosslinked acetylene-terminated **aryl ether oligomers**)

IT Polymerization  
(of acetylene-terminated **aryl ether oligomers**)

IT 90760-13-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(**oligomeric**, preparation and reaction of, with methylbutynol)

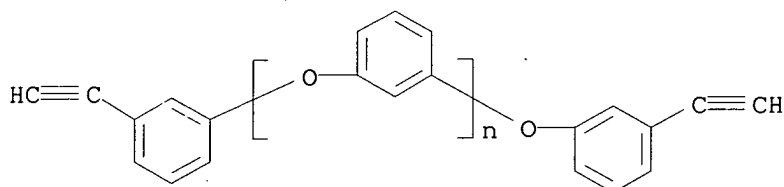
IT 90760-10-4P 90760-11-5P 90760-12-6P  
RL: PRP (Properties); SPN (**Synthetic preparation**); PREP (**Preparation**)  
(**oligomeric**, preparation and thermal properties of)

IT 115-19-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with bromine-terminated **aryl ethers**)

IT 90760-12-6P  
RL: PRP (Properties); SPN (**Synthetic preparation**); PREP (**Preparation**)  
(**oligomeric**, preparation and thermal properties of)

RN 90760-12-6 HCAPLUS

CN Poly(oxy-1,3-phenylene),  $\alpha$ -(3-ethynylphenyl)- $\omega$ -(3-ethynylphenoxy)- (9CI) (CA INDEX NAME)



L50 ANSWER 38 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1969:439520 HCAPLUS

DN 71:39520

TI Synthesis of **oligomers** of dihydric phenols under the influence of zinc chloride

AU Paushkin, Ya. M.; Golubovskaya, L. P.; Omarov, O. Yu.; Mkrtchan, V. R.

CS Mosk. Inst. Neftekhim. Gazov. Prom. im. Gubkina, Moscow, USSR

SO Vysokomolekulyarnye Soedineniya, Seriya B: Kratkie Soobshcheniya (1969), 11(5), 376-8  
CODEN: VYSBAI; ISSN: 0507-5483

DT Journal

LA Russian

GI For diagram(s), see printed CA Issue.

AB Poly(hydroxyphenylene)**oligomers** (I) were prepared from hydroquinone (II), pyrocatechol (III), and resorcinol (IV) by dehydration in the presence of  $ZnCl_2$  at 170-300°. The effect of temperature, reaction time, and monomer-catalyst ratio were studied. The optimum mole ratio of monomer-catalyst was 1:0.5. With increasing temperature and prolonged reaction times the yields of I increased, and the percentage of  $Me_2CO$ -soluble fraction decreased. The mol. wts. of the I obtained after 6 hrs. at 200° from II and III were 970-90, while under the same conditions



IV yielded a I of mol. weight 500-510. The calculated value of the hydroxyl number

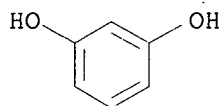
was lower than the theoretical, and indicated that at atmospheric pressure polycondensation also partially occurs to form polyethers (V).

CC 35 (Synthetic High Polymers)  
 ST polyhydroxyphenylene **oligomers**; **oligomers** dihydric phenols; phenols **oligomers** dihydric; dihydric phenols **oligomers**; hydroquinone **oligomers**; pyrocatechol **oligomers**; resorcinol **oligomers**  
 IT 26982-52-5P 26982-53-6P 26982-54-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, zinc chloride catalysts for)  
 IT 26982-54-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, zinc chloride catalysts for)  
 RN 26982-54-7 HCAPLUS  
 CN 1,3-Benzenediol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 108-46-3

CMF C6 H6 O2



L50 ANSWER 39 OF 39 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1969:58407 HCAPLUS

DN 70:58407

TI Phenyl-capped poly(phenylene ethers)

IN Jerussi, Robert A.; McCormick, Michael R.

PA General Electric Co.

SO U.S., 3 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3424722	A	19690128	US 1968-694801	19680102
PRAI	US 1968-694801		19680102		

AB Poly(phenylene oxides) are converted to their alkali metal salts in solution and then treated with monohalobenzenes at 200-300° in the presence of a dissolved Cu salt and an amine which is thermally stable under the reaction conditions. Thus, a solution of 60 g. poly-(2,6-dimethyl-1,4-phenylene oxide) in 500 ml. 2:3 volume PhBr-PhMe was titrated with the K ketyl of PhAc, prepared by dissolving 3.6 g. K in a solution of 8.4 g. PhAc and 13 g. Et3N in 50 ml. benzene. The titrated I solution was diluted to 600 ml. with addnl. PhBr-PhMe mixture, treated with 5.28 g. **CuBr**, and heated in an autoclave under N 1 hr. at 250°. The solution was cooled, diluted with PhMe, filtered to diatomaceous earth, and concentrated to

600

ml. The polymer was precipitated by adding 3.5 l. MeOH, the first l. of which contained 15 ml. concentrated HCl and was added dropwise. The polymer was

washed several times with hot MeOH and then dried at 60° and 20 mm., giving 57.4 g. polymer having intrinsic viscosity 0.60 dl./g. (CHCl<sub>3</sub>, 25°). The polymer was easily hot-pressed into moldings, and was highly resistant to hydrolysis in alkaline media. The use of poly(2,6-diphenyl-1,4-phenylene oxide) and poly(6-methyl-2-phenyl-1,4-phenylene oxide) is also claimed. The etherified polymers have improved thermal stability.

NCL 260047000

CC 35 (Synthetic High Polymers)

IT 28724-23-4P 28724-24-5P 28880-52-6P

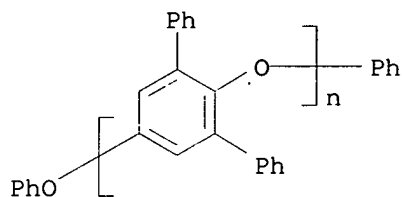
RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of, for improved thermal stability)

IT 28724-23-4P 28724-24-5P 28880-52-6P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of, for improved thermal stability)

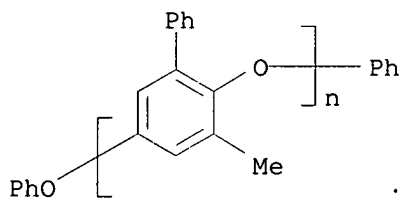
RN 28724-23-4 HCAPLUS

CN Poly[oxy[1,1':3',1''-terphenyl]-2',5'-diyl], α-phenyl-ω-phenoxy- (9CI) (CA INDEX NAME)



RN 28724-24-5 HCAPLUS

CN Poly[oxy(3-methyl[1,1'-biphenyl]-2,5-diyl)], α-phenyl-ω-phenoxy- (9CI) (CA INDEX NAME)



RN 28880-52-6 HCAPLUS

CN Poly[oxy(2,6-dimethyl-1,4-phenylene)], α-phenyl-ω-phenoxy- (9CI) (CA INDEX NAME)

